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THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, W.C.2. Telephones: Temple Bar 6251-2-3-4

VOL. CLXXXIII DECEMBER 12, 1952 No. 5730

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THIS WEEK'S NEWS

A.R.C.U.K. HAS ASCERTAINED that it can compel the attendance of witnesses whose evidence is regarded as essential in disciplinary cases. p. 860

DETAILS are given of the competition for the Uganda Electricity Board's new head office building to be erected at Kampala. p. 860

A SAVING OF £50 A HOUSE in the cost of building has been achieved with the aid of a rail-mounted tower crane on a site at Norwich. p. 881

THE SCOPE of the Town Development Act is outlined by the Minister of Housing in a memorandum recently sent to local authorities. p. 886

THE COST OF HOUSE REPAIRS is now estimated by the R.I.C.S. to have risen to 293 per cent. of the 1939 figures. p. 889

THE VALUE OF BUILDING RESEARCH

THE Reports of the Building Research Board and of the Director of Building Research, which have just been published,* once again make an impressive and instructive document. Since April, 1950—when responsibility for the research on building operations and user requirements previously carried out by the Ministry of Works was transferred to the Department of Scientific and Industrial Research—by far the greater part of government research has been under the control of the Building Research Board and, in particular, of the Director. The year 1951 was therefore the first complete year of the new order, and it is interesting to read of the way in which the Board have endeavoured to co-ordinate this new work with the older work of the B.R.S. There will, we think, be general agreement with the view that the Board have done wisely in endeavouring to concentrate on a limited number of major objectives, while maintaining work on a limited scale over a much broader field.

Research is, of course, a long-term policy, and the success of a body such as the B.R.S. cannot be measured by its positive results in any one year. But the results of the Station's work during 1951 indicate the very real contribution which it is making to the solution of some of the urgent problems of the building industry. For instance, there was published during the year the results of a major study on the design of steel frames as rigid structures. It has been known for a long time that substantial economies in the use of steel could be achieved by this method, but the complete mathematical analysis which is required is too complex for design purposes, and the simplified methods available in the past were subject to a wide margin of error. As a result of the study carried out by the B.R.S. a method of design has been developed which is simple enough for working use and yet accurate enough to yield substantial economies in steel. In some of the cases examined the saving was as high as 15 to 20 per cent. The value of this work in making our restricted supplies of steel go further, and, in reducing costs, needs no emphasis.

In view of the high cost of housebuilding, which is at present so much under discussion, special interest attaches to the results of work carried out by the Station which, if widely adopted in practice, would make a valuable contribution to the lowering of costs. Studies in the use of short bored piles for the foundations of houses on clay soils indicate that, where the clay is suited to hand boring, this type of foundation for a pair of semi-detached houses is usually £8 to £15 cheaper than the conventional foundation. The present cost of a pile foundation bored by machine in firm to stiff clay is said to be approximately the same as for the usual deep strip foundation, but it is estimated that when mechanical augers are more readily available in this country the cost of pile foundations is likely to be appreciably lower. Another important method of saving house-building costs has been evolved as a result of survey work on drainage systems; in a recent example the adoption of recommendations for a simplified lay-out of surface and soil water drainage reduced the estimated cost by over £30 a house.

These are a few examples of the practical value of building research, as revealed by the latest annual report. The whole document will repay perusal by architects and contractors, many of whom will no doubt be particularly interested in the account of special investigations carried out during the year under review, some of them on a repayment basis. There is also an excellent list of reports and technical publications issued during 1951.

No assessment of the work of the B.R.S. would be complete, however, without reference to the serious difficulties which have confronted the Station in regard to staff and buildings. The staff difficulties are, ironically enough, caused in part by the very success of the Station's work. Commenting on the high rate of staff turnover—amounting for scientific and experimental staff to an average of about 12½ per cent. over the last five years—the Report says "A flow of trained staff to industry is, we believe, part of the service the Station can render, and it is indeed a natural consequence of the increasing use by industry of the Station's work, but this rate has put a heavy strain on its resources." The situation with regard to buildings is almost as serious, but could more easily be remedied. The work is at present carried on at three centres—Garston, Boreham Wood and in offices at Kensington. This position is detrimental to both economy and efficiency, and it says little for the Government's faith in the value of building research that it is, apparently, unwilling to provide the additional land and buildings at Garston which are needed to gather the work into one unit. Those who are responsible for this might well read this latest Report.

* "Building Research, 1951." H.M.S.O., price 4s. 6d.

NOTES & NEWS

THE GRANGE, FULHAM

SOME forceful arguments in support of the bid to preserve "for cultural purposes" the house known as The Grange at North End-crescent, Fulham, were expressed by several speakers at a public meeting held at the Stationers' Hall, London, on December 4. Built in 1713, The Grange is noted for its literary and artistic associations. It was the home of Samuel Richardson ("the father of the modern novel"), who entertained there many famous personalities, among them Dr. Johnson and William Hogarth. Fulham Borough Council now wish to acquire the whole building and demolish it and erect flats on the site.

Among the most persuasive views put forward at the meeting, which was arranged by The Grange Preservation Committee, were those voiced by Prof. A. E. Richardson, R.A., F.R.I.B.A., who, appropriately, is a descendant of Samuel Richardson. Professor Richardson said that although The Grange had no extraordinary architectural merits, it was the only representative home of its period in the borough. He had many interesting anecdotes to tell of the literary associations of the house, as also had Lord Esher, M.B.E., Hon.F.R.I.B.A., Mr. Ernest Raymond and Mr. F. V. Hansford, F.R.S.A., chairman of the Fulham Historic Society, who also spoke.

The Society for the Protection of Ancient Buildings has surveyed the house and estimated that it could be restored to use for the expenditure of about £6,000. It is suggested that the house could be used either as a community centre or as a museum. There is no doubt that the existing garden is an important asset in an area which is already overcrowded.

The needs of today must in many cases take priority over the preservation of the memories of the past, but so far as The Grange is concerned a strong case has been made out by those who wish to save it, and it is to be hoped that their pleas will not be disregarded.

CHRISTMAS HOLIDAY LECTURES

THE INFORMAL Christmas holiday lectures for boys and girls at the R.I.B.A. will be given this year by Mr. Hope Bagenal, D.C.M., F.R.I.B.A., who will take as his subject "Huts, Houses and Building Stones." The theme of the two lectures will be the origins and early development of the dwelling. Both lectures will be given in the Henry Jarvis Hall at the R.I.B.A. at 3 p.m., the first on December 31 and the second on January 2. Tickets for both or either of the lectures are obtainable free on application to the Secretary, R.I.B.A., 66, Portland-place, W.1.

Serious entertainment for young people will also be provided at the same period by the Royal Institution, which has arranged a series of six Christmas lectures on "How Science has Grown," by Mr. F. Sherwood Taylor, Ph.D., M.A., B.Sc., to be held at the Royal Institution, 21, Albemarle-street, W.1, at 3 p.m. on December 22 and 30 and January 1, 3, 6 and 8. The subscription is, for juveniles (aged 10-17) £1; for adults £2.

ARCHITECT'S RETIREMENT

AFTER 32 years' service in the architect's department of the L.C.C., Mr. J. H. Farrar has retired. He is 65. Mr. Farrar has worked in many divisions of the architect's department, including those concerned with housing and town planning. As the officer-in-charge of the historic records work of the department, a position he held for eight years, he was responsible for matters relating to the examination, listing and preservation of buildings of historical and architectural interest. He also personally supervised the production of the drawings and architectural material contained in the published volumes of the London Survey.

LONDON BUILDERS' CONFERENCE

THE COUNTY ARCHITECTS' SOCIETY has passed a resolution deprecating the activities of the London Builders' Conference and allied bodies, and noting with pleasure that the R.I.B.A. is to take further action in the matter.

TEMPLE BAR

THE ROYAL FINE ART COMMISSION has told the City lands committee of the Corporation of London that, in its view, the most satisfactory solution of the problem of Temple Bar would be to leave it in its present position at Theobalds Park, near Cheshunt, Hertfordshire.

MAINTENANCE SCHOLARSHIPS

THE ARCHITECTS' REGISTRATION COUNCIL offer for award in June, 1953, certain Maintenance Scholarships in Architecture. The scholarships will consist of a grant for the payment of one-third of the school fees, and, when necessary, a maintenance allowance, and will be available for students of British nationality, who could not otherwise afford such training, to enable them to attend architectural schools approved by the Council. Forms of application, which must be returned completed by January 31 next, from the Secretary, Board of Architectural Education, A.R.C.U.K., 68, Portland-place, W.1.

COMING EVENTS

FRIDAY, DECEMBER 12

SOCIETE DES INGENIEURS CIVILS DE FRANCE (BRITISH SECTION).—"Development and Research on Pre-Stressed Concrete Continuous Structures," by M. Y. Guyon. Institution of Civil Engineers, Great George-street, S.W.1. 5.30 p.m.

LONDON SOCIETY.—Lecture on the Wellington Museum, Apsley House, by Mr. C. H. Gibbs-Smith, M.A., F.R.S.A., F.M.A. 6-8, John Adam-street, Adelphi, W.C.2. 5.30 p.m.

MONDAY, DECEMBER 15

ECCLESIOLOGICAL SOCIETY.—"English Renaissance Buildings in Colour," by Mr. P. Johnson-Marshall, A.R.I.B.A., A.M.T.P.I. Archbishop Temple's School, 202, Lambeth-road. 7 p.m.

TUESDAY, DECEMBER 16

R.I.B.A.—"Pre-Stressed Concrete," by Mr. O. J. Masterman, B.Eng., A.M.I.C.E., A.M.I.Struct.E. 66, Portland-place, W.1. 6 p.m.

INSTITUTION OF SANITARY ENGINEERS.—"An Introduction to Pre-Stressed Concrete and its Application to Sanitary Engineering," by Mr. R. C. Blyth, M.A., A.M.I.C.E. Caxton Hall, Westminster, S.W.1. 6 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS (SCOTTISH BRANCH).—"Structural Design of Cranes," by Mr. J. H. Huntley. Ca'doro Restaurant, Glasgow. 6 p.m.

R.I.C.S.—"Large-Scale Mapping by Photogrammetric Methods," by Messrs. P. G. Mott, F.R.I.C.S., and H. Dawe. 12, Great George-street, S.W.1. 5.30 p.m.

THURSDAY, DECEMBER 18

M.O.W.—"Dampness in Buildings," by Mr. A. G. Day. Caxton Hall, Westminster, S.W.1. 6.30 p.m.

FRIDAY, DECEMBER 19

ARCHITECTURAL ASSOCIATION.—A.A. Carnival. 34-36, Bedford-square, W.C.1. 7.30 p.m. to 2 a.m.

BIRMINGHAM AND FIVE COUNTIES A.A.—"A Ramble in the South-east Mediterranean," by Mr. John B. Surman, F.R.I.B.A. Royal Birmingham Society of Artists' Galleries, New-street, Birmingham. 6 p.m.

VICTORIA AND ALBERT MUSEUM.—"C.F.A. Voysey, The Glasgow School, and 'Art Nouveau,'" by Elizabeth Aslin. V. and A. Museum, South Kensington, S.W.7. 6.15 p.m.

STEEL SAVING ON FLATS

BIRMINGHAM HOUSE BUILDING COMMITTEE reached two important decisions at its meeting on December 4. One was to authorise the building of six-storey flats in load-bearing brickwork, the first time Birmingham has agreed to build flats over three storeys without steel. The other was to approve layouts for two new city housing estates at Rubery and Castle Bromwich, with the high density of 18 dwellings to the acre.

PROFESSIONAL ANNOUNCEMENTS

MR. STANLEY F. PERCY, F.R.I.B.A., having resigned his appointment with Teignmouth U.D.C., has opened an office at 7, The Triangle, Teignmouth, Devon, where he will be pleased to receive trade publications.

Mr. N. H. TILLEY, incorporated quantity surveyor, announces that he has recently entered into business on his own account at Dersingham, King's Lynn, Norfolk, where catalogues, etc., would be welcomed.

FROM "THE BUILDER" OF 1852

Saturday, December 11, 1852

THE PRESERVATION OF STONE.—It has often occurred to me that the Royal Institute of British Architects or the Society of Arts would do great service by offering rewards for the best mode of preserving stone-work in London from rapid decay. From some condition of the London atmosphere this decay seems to be of late greater in a short space of time than at any former period. . . . It is no use decrying cements and other materials as "shams" and imitations, while the real thing is so expensive and fragile; and it will become more serviceable to the public to encourage the correct and careful appliance of other materials than to condemn them—unless stone can be more economically recommended as a lasting material.—J.M.B.

CORRESPONDENCE

ARCHITECTURE ON THE AIR

To the Editor of *The Builder*

SIR,—Your Editorial last week suggested that the B.B.C. should devote more time to architecture as an art affecting the ordinary layman. May I direct your attention to a programme particularly arranged for young listeners called "Hallo There," in which I am giving a series of talks on architecture?

The titles of the talks given so far have been, "The Work of an Architect," "How a Cinema is Built," and "The House You Live In." The emphasis in all these has been to try to encourage young people to look around and be critical of their surroundings.

The fact that the B.B.C. is prepared to include talks of this kind in what is essentially an entertainment, rather than educational, programme goes some way to answering your criticism.

STEPHEN GARRETT [M.A., A.R.I.B.A.]
109, Great Russell-street, W.C.1.

MARSEILLES HOUSING SCHEME

To the Editor of *The Builder*

SIR,—I see from *The Times* correspondent's article that the "flats" at Marseilles have cost 4,000 million francs, according to Maitre Valensi, counsel for the prosecution in the lawsuit brought by the "Society of the General Aestheticism of France" against the architect, M. Le Corbusier. This means that each flat in this revolutionary housing scheme has cost about £13,000 (including the so-called "amenities" contained within the structure).

How many thousands of tons of scarce steel were used in this structure, I wonder, bearing in mind that steel is very scarce over there, too? Perhaps if one doesn't bother to get the necessary permits, as was the case here, apparently, one can use what one likes (if a "genius"!).

The report on this lawsuit should be read by us all in the profession here, as it shows what "modern" methods of tall building construction (17 storeys high) are likely to cost us for our vertical "housing features." Not that we, as yet, have an "Aesthetic Society" to demand £20,000 from the architect for erecting a building contrary to our English style and æstheticims!

A. NEVILLE HOLT [F.R.I.B.A.].
43, Imperial Buildings, Liverpool.

*** The Paris correspondent of *The Times*, reporting on December 3, stated that the case against M. Le Corbusier (who was that day being sued for 20 m. francs, before the Tribunal Correctionnel of Marseilles, by the "Society for the General Aestheticism of France") was that he erected the 17-storey block of flats without the necessary permits, and that his building "has drawbacks of a moral order and is contrary to French style and aestheticism." Our contemporary's correspondent continues: M. Le Corbusier is at present at Dundjalo, in India, where he has been asked to rebuild the town in accordance with his revolutionary ideas. The first witness called enumerated the drawbacks of the "Radiant City"; narrow stairs, lack of intimacy, absence of furniture, half-lit kitchens, and attic bedrooms. The only innovation, he said, was the shopping centre, but this caused people to become cloistered in their buildings.

Another witness, a former president of the Paris municipal council, and an architect, stated that Frenchmen preferred individual houses to collective dwellings. "We are faced," he said, "with an official attempt to control housing, and I do not think the Frenchman wants to be told how he must house himself." The building, he added, had been condemned by the National Council of Hygiene.

Maitre Valensi, counsel for the prosecution, said the society's action was designed to combat the erection of those "great warts which are the country's shame." The action, he emphasised, was a contest between romanticism and brutal realism. The point was whether M. Le Corbusier, who was refused a building permit—but, it might be added, obtained leave from the Ministry of Reconstruction to proceed—could mock the law.

"Had we asked for the strict application of the law," Maitre Valensi declared, "we should have applied for an order calling for the demolition of the building. We will not go so far as that. We do not want to waste 4,000 m. francs"—the cost, according to him, of the building.

GERMAN BUILDING EFFORTS

To the Editor of *The Builder*

SIR,—The remarks, attributed to Herr Schwarzer, which appeared in *The Builder* of October 17 last, are not supported by facts.

It is true that buildings are erected very quickly, and that household fittings, especially kitchen equipments, are attractively finished, but on no account can it be claimed that the standards of design, materials and workmanship are higher in Germany than they are in Britain.

Bricklaying in particular is shoddy, and first-quality bricks do not seem to exist. Dwelling-houses and even larger buildings are thrown together, and the rendered finish covers a multitude of voids, bats, "grizzles," and the absence of any form of bond.

Many fittings, whilst more refined and chromium-plated, lack robustness, and replacements are numerous.

Joinery and interior decorating are of a high standard, but the use of unseasoned timber and poor quality paint is prevalent and offsets the workmanship.

Electrical fittings superficially are well finished, but are fragile. Wiring is often crude to an extreme, and would not satisfy British regulations.

Design in general, however, is quite good, and equivalent to British standards. Detailed attention is given to the layout of kitchens, which are well provided with labour-saving equipment.

To sum up, the term applied during the inter-war years to any form of shoddy building aptly describes the type of building prevalent in Germany to-day.

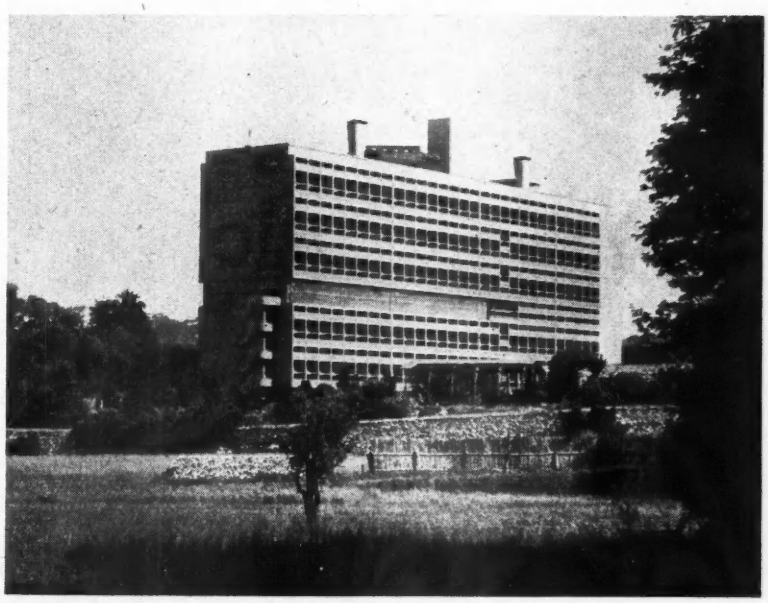
D. N. CAMERON.
C.R.E. Paderborn, B.A.O.R. 16.

"TOPPING OUT"

To the Editor of *The Builder*

SIR,—Your correspondent draws attention to "topping out," an old custom which it is pleasing to note appears to be enjoying increasing popularity nowadays.

One of the earliest illustrations of "topping out"—in recent years sometimes referred to as "chimney beer"—is that depicted by Hogarth in his famous "Beer Street" picture which he produced just over 200 years ago, in 1751. "Beer Street" shows everyone (with the exception of the pawnbroker!) thriving and prosperous as a result of remaining



UNITE D'HABITATION, MARSEILLES. This scheme of flats at Marseilles, by Le Corbusier, is the subject of a law case, noted above.

faithful to the national beverage. In the background is a house which appears to be nearing completion ; a flag flies and three or four workmen are shown sitting on the roof raising their tankards in celebration.

Most things were celebrated with "ales" in days gone by. There were church ales, to raise funds for the church ; clerk ales, to assist underpaid parish servants ; bride ales, forerunners of wedding breakfasts ; and many others. Any reason seemed good enough for a celebration—in Shropshire the first sound of the cuckoo would set off a cuckoo ale, when "men would leave their work and spend the rest of the day in mirth and jollity."

In such circumstances, I am sure it would not have been beyond the ingenuity of our ancestors to devise something in the nature of a "house ale" to mark a building achievement, and, indeed, what we now call "topping out" seems to be just that. P. H. T. EVANS.

42, Portman-square, W.1.

COST OF HOUSES

To the Editor of *The Builder*

SIR,—I wonder if one of your readers could tell me what proportions of the cost of houses the different trades should be : Bricklayer ; Excavator and Concretor ; Drainlayer ; Roofing ; Carpenter and Joiner ; Plasterer ; Plumber ; Electrician and Gas Fitter ; and Painter and Decorator and Glazer.

AN INTERESTED READER.

A.R.C.U.K.

Compulsory Attendance of Witnesses

THE Architects Registration Council has issued the following statement on the compulsory attendance of witnesses, where evidence is regarded as essential in substantiating or rebutting alleged offences :—

The Discipline Committee of the Architects Registration Council have been hindered in the past in the conduct of their inquiries by the inability to secure the attendance of witnesses whose evidence was essential to prove or rebut the offence alleged. It has now been ascertained that the compulsory attendance of witnesses can be secured by the issue of a writ of subpoena from the Crown Office of the High Court of Justice at the instance of either of the parties to an inquiry before the committee. The High Court has at all times been willing to lend its aid to inferior tribunals where they have wanted the means of enforcing the attendance of witnesses, and the necessary arrangements have been made so that subpoena can be issued without difficulty. In fact a witness attended on subpoena at an inquiry held by the Discipline Committee on November 19.

The right to a Crown Office writ of subpoena arises from the fact that the findings of the Discipline Committee are subject to review by the High Court under Section 9 of the 1931 Act on appeal by the architect whose conduct has been the subject of an inquiry by the Discipline Committee.

The compulsory attendance of witnesses will be of material assistance to the committee in carrying out its work.

COMPETITION NEWS

Uganda Electricity Board

COMPETITION FOR NEW HEAD OFFICE BUILDING, KAMPALA

REFERENCE was made in *The Builder* of October 24, to the proposal of the Uganda Electricity Board to hold a competition for designs for a new head office building in Kampala, estimated to cost £350,000. The competition—open to architects practising, or entitled to practise, in the United Kingdom and all British Commonwealth Nations, Colonies or Dependencies—carries premiums of £1,000, £750, £500 and £250.

CLOSING DATE FOR NAMES

Intending competitors are reminded that they must submit their names and addresses to the Secretary, Uganda Electricity Board, P.O. Box 559, Kampala, Uganda, by December 23 next. A deposit of £3 3s. is required, upon receipt of which conditions of competition will be issued. The closing date for designs is July 25 next ; the assessor is Mr. N. L. Hanson, B.Arch., A.R.I.B.A., M.I.A., of Johannesburg and Durban.

THE ASSESSOR'S CAREER

The assessor, Mr. Norman Leonard Hanson, B.Arch., A.R.I.B.A., M.I.A., is one of the best known architects in South Africa. Born in 1909, in Johannesburg, he received his architectural education at the University of the Witwatersrand, graduating in 1932. Since then he has been in private practice in partnership with S. N. Tomkin (and for a number of years, N. I. Fink), in Johannesburg and Durban.

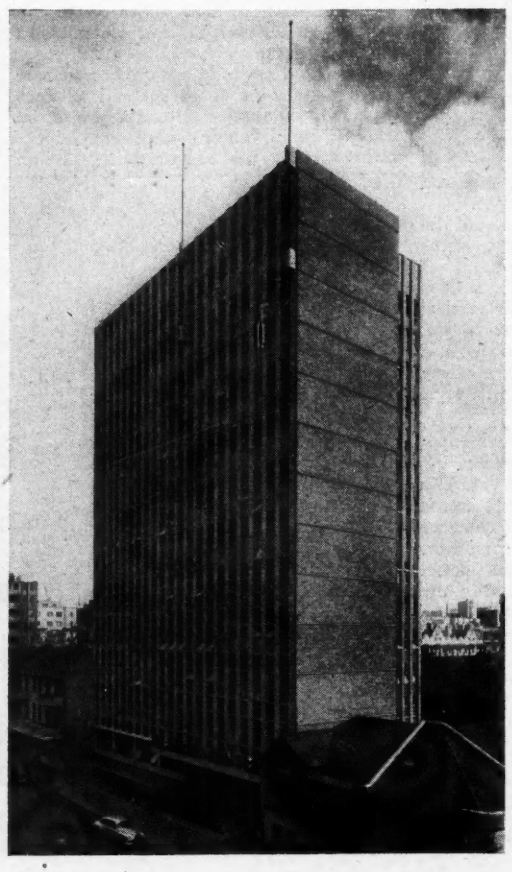
Mr. N. L. HANSON, B. ARCH., A.R.I.B.A.

Mr. Hanson has done much work for the profession in South Africa. His appointments include the following : Past President-in-Chief, Institute of South African Architects (1947-48) ; Past President, Transvaal Provincial Institute of Architects (1945) ; Member, Central Council, I.S.A.A. ; Member, Provincial Committee, T.P.I.A. ; Member, Board of Education, I.S.A.A. ; Member, Board of the Faculty of Architecture, University of the Witwatersrand, and External Examiner ; Executive Member, National Housing and Planning Commission ; Member, Building Research Advisory Committee of National Building Research Institute ; and Member, South African Delegation to Regional Conference on Housing Research (under Commission pour la Co-operation Technique en Afrique au Sud du Sahara).

He has been assessor in several South African architectural competitions.

His principal works (in partnership and association) are : 20th Century Cinema, Johannesburg ; Natal Provincial Administration Building, Durban ; Flats for the Natal Housing Board, Durban ; Butterworth's Hotel Durban ; Durban Confectionery Works, Durban ; Nelspruit High School, Transvaal ; and Medical Centre Johannesburg.

This year he was awarded the I.S.A.A. Award of Merit (for buildings in Transvaal, 1948 to 1951) for the Medical Centre, Johannesburg (see illustration).



THE MEDICAL CENTRE, JOHANNESBURG, designed by N. L. Hanson and S. N. Tomkin.

BOOKS

THE HEART OF THE CITY. Edited by J. Tyrwhitt, J. L. Sert, and E. N. Rogers Pp. 185. Illustrated. (London: Lund Humphries.) Price 50s.

SHORN of all its trimmings, this striking and handsomely produced volume is no more than a report of the proceedings of the eighth meeting of the C.I.A.M. (*Congrès Internationaux d'Architecture Moderne*), held at Hoddesdon in Hertfordshire in the spring of 1952. Surely no similar gathering of learned folk has ever been more sensationally presented to the public; and, as the "blurb" on the jacket informs us, "a vivid impression of it sparkles from the end-papers to this book drawn by Saul Steinberg" (a wild caricature of St. Mark's Piazza at Venice).

Every artifice of whimsical, wilful, and up-to-the-minute typography and illustration has been utilised to brighten the torrent of vague theorising and the spate of polysyllabic words that always flow on such occasions. One can hardly imagine the grave proceedings of the British Association, or even the Annual Conference of the R.I.B.A., being dished up in such a highly seasoned form; but the publishers know their own business best, and a stolid report of technical papers and discussions, illustrated by normal diagrams and photographs, would not make such a popular appeal.

The theme of the Congress was, at Hoddesdon, "The Core of the City"; but this book bears the title "The Heart of the City." On page 159 the puzzled reader is informed that "instead of the over-employed term 'civic centre,' the old English word core was selected, which the Oxford English Dictionary defines as the central innermost part, the heart of all'."

The promoters, who had gathered from all parts of the Old World and the New, said that they felt "concern about the restoration of balance between individual and collective spheres of behaviour." In plain English, they wished to substitute for the usual whirling focus of wheeled traffic a quiet central space from which all vehicles would be banished, and where human beings could meet for relaxation, conversation and social gaiety. Moreover, they wished that this "core" should be free of civic buildings. (Although no mention is made of it in all the flood of words, it would seem that St. Stephen's Green at Dublin approaches the ideal they have in mind.)

The book develops this theme and describes sundry attempts made in recent town planning schemes to achieve their purpose; but, at the end of it all, though their ideal is admirable and most deserving of encouragement, it is difficult to see how it could ever be attained save in the very newest of "New Towns."

M. S. B.

DICTIONARY OF ARCHITECTURE. By Henry H. Saylor. London (Chapman and Hall, Ltd.). Price 36s.

THIS LITTLE WORK, an American compilation, is intended "to serve as a modest and convenient aid to those who would know the vocabulary of this mother of the arts." It contains approximately 5,000 entries, most of them relating to the historical styles, though there is a fair proportion of modern technical terms and, indeed, a number that are strictly neither technical nor purely architectural but general—"opera house" and "post office," for example. Many of the terms, too, relate to American practice and would not normally be found in a comparable work produced in this country. Within the limitations indicated the author has produced a scholarly and useful little work which, as the editor of their Journal, he appropriately dedicates to the American Institute of Architects. The value of the book is greatly enhanced by 16 plates of admirably drawn illustrations. G. J. H.

BUILDING CONSTRUCTION ILLUSTRATED. By Denzil Nield, A.R.I.B.A. Pp. xii, 148. Illustrated (London: E. and F. N. Spon, Ltd.) Price 21s.

THE WRITING of a new manual of building construction is always difficult, even when it is limited chiefly, as in this case, to the comparatively simple operations involved in the erection of a small house; because the constant introduction of new materials and processes entails the omission of older "traditional" items, otherwise the book becomes too long and too expensive. Much depends, too, upon the ability of the writer to draw his diagrams so that "every picture tells a story" in the simplest and most informative way and thereby reduces the explanatory text to a minimum. Mr. Nield has faced this task skilfully so that the diagrams and text both fulfil their purpose, though the price is rather high for the average apprentice to one of the building trades, and it is to such students that he makes a special appeal. Compared with older textbooks, he has discarded many items to save space: brick walls over 13½ inches thick, brick trimmer arches, framed timber floors, all masonry except simple walling and steps, queen-post roof-trusses, casement windows opening inwards, etc.

On the other hand, he has retained trussed timber partitions, king-post trusses, and several other old friends. Into his relatively short text and 175 diagrams he has packed a surprising amount of clear, practical and up-to-date information, which seems to cover everything required for a small house; together with a brief treatment of steel-framed and reinforced concrete construction. timber structure and conversion, shoring and underpinning, the one-pipe system of drainage, and central heating. Frequent reference is made to British Standard Specifications and codes of practice. Materials are briefly described as they are mentioned, not relegated to a separate chapter

The diagrams are excellent, especially those illustrating sanitary fittings; but there are a few where a beginner may find some difficulty in understanding the ingenious method of presentation, e.g., in Nos. 1, 59-64 and 110; but especially in the frontispiece, where the bath appears to be standing in the entrance hall on the ground floor instead of upstairs on the first floor.

The book does not seem to follow the syllabus of any particular examining body, but may be strongly recommended to all students of building, whatever their precise category. In his preface, Mr. Nield voices an impassioned protest against the increasing tendency to over-specialisation and subletting in the building industry.

M. S. B.

HOUSING AND FAMILY LIFE. By Professor J. M. Mackintosh. Pp. x, 230. Illustrated. (London: Cassell and Co., Ltd.). Price 16s.

THE AUTHOR of this interesting book reasonably claims that, in spite of the enormous amount of available literature relating to housing, he does not "trespass on ground that has been covered," and that he has confined himself "to two main issues, both of which are essentially medical: the relation between the dwelling and the health of the family, and the health functions of the home." Yet though he writes authoritatively as a university professor of public health, he also speaks as a warm-hearted family man with obvious sympathy with the unfortunate victims of defective housing; and it is astounding, even to those of us who shuddered at the revelations made in the book "Our Towns" only a few years ago, to learn from his pages how large a number of our people are still suffering under the terrible conditions of slums and tenement homes. It is equally important for us to realise, as he makes abundantly plain from his own wide experience, that such conditions are not peculiar to towns but apply also in rural districts. His book will enlighten architects and builders on many points that textbooks do not cover: exactly how infection is spread, how far "overcrowding" can be measured and how far it can be blamed for infection and poor health, to what extent dampness actually causes disease, and how it leads to mental depression. He tells us that, in his experience, slum-dwellers generally "make good" after being re-housed.

Apart from these matters, however, he provides much practical advice for all concerned with house-building. He considers that 7 ft. 6 in., is an ample height for habitable rooms, and that far more should and could be done to economise in fuel while providing a more scientific and constant distribution of heat. While advocating very sensibly the elimination of dampness in old cottages, he omits to mention that it is often possible to insert a horizontal damp-course into old walls.

On the much debated question of discarding a "parlour" or "show-room"—known in Sweden as the "finrum" and extremely popular there—he states arguments for and against, urging that, in these days of radio, where there are children with homework to do, either a parlour or a heated bed-sitting room must be provided somehow.

M. S. B.

BOOKS RECEIVED

INDOOR PLANTS AND GARDENS. By Margaret E. Jones and H. F. Clark. (London: Architectural Press.) Price 18s.

MODERN ARCHITECTURAL DESIGN. By Howard Robertson, M.C., A.R.A., P.R.I.B.A. (London: Architectural Press.) Price 25s.

ROOTS OF CONTEMPORARY AMERICAN ARCHITECTURE. By Lewis Mumford. (London: Chapman and Hall.) Price 56s.

SIMPLE EXAMPLES OF REINFORCED CONCRETE DESIGN. 4th Edition. By Dr. Oscar Faber. (London: Oxford University Press.) Price 9s. 6d.

11, IRONMONGER LANE. By Donovan Dawe. (London: Hutchinson and Co.) Price 10s. 6d.

HANDCRAFT IN WOOD. By John Hooper. (London: B. T. Batsford, Ltd.) Price 21s.

HILL AND REDMAN'S LAW OF LANDLORD AND TENANT. Supplement to 4th Edition. By W. J. Williams. (London: Butterworth and Co. (Publishers), Ltd.) Price 9s. 10d.

*** *Books reviewed in these columns may be obtained on application to the Book Centre, "The Builder," 4, Catherine-street, Aldwych, W.C.2. Cash (which should include 6d. to cover postage and packing) should accompany the order.*

Repairs in progress on the stone-tiled roof of the Market Hall, Chipping Campden.

STONECRAFT IN THE COTSWOLDS

By CLARE SPURGIN, Chairman, Housing Development Committee, N. Cotswold R.D.C.

THE Cotswold region of England, famous for its agriculture, wool and stone building, still retains many of its ancient crafts. Traditional building in local stone has changed little over the centuries, and the solid simplicity, born of natural material, has moulded what has often been termed the farmhouse style of domestic architecture. Dry walling has not altered materially in 4,000 years. The work in the long barrow of Belas Knap is still a model of the skill of stone laying. The Roman villas and Saxon and Norman churches were built by craftsmen coming from abroad but using the material to hand for their habitations. The vernacular style changed little between 1500 and 1800, though the best work was done during the prosperity of the wool merchants between 1580 and 1650, after which a classical style was introduced in the seventeenth and eighteenth centuries.

The buildings harmonise with the landscape. They grow literally out of the countryside, and this harmony of the farms, barns and villages, crowned with magnificent churches, is largely due to the use of timber and stone and stone tiles, grown and quarried near by. The limestone quarries from which the stone is obtained, a vein which stretches from Lincoln to Dorset, varies in quality, colour and permanence, and the quarries round Campden, Naunton and Hawling, which have been worked for thousands of years, are beginning again to give of their richness. These quarries have contributed to many famous buildings, not the least the tower and spire of Oxford Cathedral, the Bodleian Library staircase, parts of Windsor Castle, much of the post-fire London of Wren, and the House of Commons. Even the perpendicular style of Gloucester Cathedral grew in the minds of Cotswold masons.

SENSE OF DURABILITY

The simple Cotswold houses give a sense of durability and are of excellent proportions. They may be in ashlar (sawn freestone) or random rubble. The style is really directly derived from the medieval one, absorbing Gothic and Tudor features as the centuries moved over them. The low houses seem anchored to the hills, and the high steep roofs, so characteristic of Cotswold architecture, were built of necessity to keep the snow from collecting on the rough surface of the stone slates. The character was and is imposed by the stone itself, despite the Renaissance or Georgian influences.

Stone slates, now, alas, an expense of which modern construction seldom allows, were one of the most delightful of the Cotswold crafts. A roof of an average pitch of 52 degrees needs twice the amount of timber to carry stone slates as to carry modern concrete tiles. In the accompanying, almost pre - Raphaelite photographs of Campden High-street, can be seen workmen of to-day repairing the Market Hall of 1620. These workmen are repairing the old roof which was constructed without ridge boards, the rafters, collars and braces of which were originally cut, finished with an adze, and matched and fitted on the ground before erection. This is entirely a craftsman's job. The purlins were often put in green and they dried with the slates upon them. The slates, which had been dug in autumn, and frosted in winter so that the quarry sap which was in them split them, were thinner than the ordinary "present" slates which were quarried directly. These slates, which were graduated in size—the largest at the eaves and the smallest at the ridge—bore special names in different villages; the slatter's wooden rule being constantly used. Some examples of the names are as follows :—

In Bourton-on-the-Water they were called : Short Cock, Middle Cock, Long Cock, Short Cuttings, Long Cuttings, Maverday, Short Back, Middle Back, Long Back, Short Batchelor, Short Nine, Long Nine, Short Wivett, Long Wivett, Short Eleven, Long Eleven, Short Twelve, Long Twelve, Short Thirteen, Long Thirteen, Short Fourteen, Long Fourteen, Short Fifteen, Long Fifteen, Short Sixteen and Long Sixteen.

Round Campden : Short Cuttings, Long Cuttings, Muffedy, Short Becks, Middle Becks, Long Becks, Short Batchelors, Long Batchelors, Short Nines, Long Nines, Short Wyvetts, Long Wyvetts, Short Eleven, Long Eleven, Short Twelve, Long Twelve.

Round Tetbury : Even Farwells, Long Farwells, Even Chivelers, Long Chivelers, Even Gaurdians, Long Gaurdians, Even Spots, Long Spots, Even Cuttings, Long Cuttings, Even Batchlers, Long Batchlers, Even Nines, Long Nines, Even Wivets, Long Wivets, Even Twelves, Long Twelves, Even Fourteens, Long Fourteens, Even Sixteens, Long Sixteens, Even Eighteens, Long Eighteens, Even Twenties, Long Twenties, Even Twenty-ones, Long Twenty-ones, Even Twenty-twos, Long Twenty-twos, Even Twenty-threes, Long Twenty-threes, Long Twenty-fours.

The laths on all the old houses were split by hand, and when repairing the Market Hall the workmen were able to use rentlaths, they (the workmen) being the direct descendants of those slatters and stone masons working 30 or 40 years

An earlier stage in the work of repairing the roof of the Market Hall, Chipping Campden. Note the steep pitch of the roof to throw off snow from the rough stone tiles.

ago when, as boys, they learned this art which is now for the most part used for repairing.

The tiles were fixed by oak pegs except for the valley tiles which (as can be seen in the photograph) were fixed by the weight of the tiles upon them and bedded in hair mortar. The cresting on the old roofs is often irregular in line owing to the subsidence of the purlins between the principals, as the wood weathered. To our modern eyes, a roof which has been safe for hundreds of years, looks as if it is likely to fall in.

THE SPECIAL SUBSIDY

The North Cotswold and the Cheltenham Rural District Councils have, in very special cases (Lower Slaughter and Stanway) been permitted to use stone slates pinned with copper pins, of course requiring the extra timber to carry the extra weight. For other stone house building in the area stone-coloured concrete tiles are used to-day. Thanks to the support of the Stone Committees both of the Gloucestershire Community Council and of the Housing Centre, a special Section (66) was introduced into the 1948 Housing Act, giving an all-England amenity subsidy to enable, in certain cases, houses to be built of local material by local authorities. The Northern Gloucestershire districts have taken as much advantage of this as was possible, and as many as 78 houses in the North Cotswolds have been built already of local stone at Chipping Campden, Lower Swell, Lower Slaughter, Bourton-on-the-Hill and Stow-on-the-Wold. This has necessitated the opening up of further quarries and the training of masons, and the bringing back into the craft of the masons who had had perforce to take to ordinary brick-laying.

In all the more beautiful stone villages which had not had mixed building, it has been possible to build council houses in stone, and in some cases reconstructed stone (which is made by various firms in Gloucestershire, the colour now approximating far nearer to natural stone). Both private houses and council houses are being built of both materials. Whilst preferring the real stone which weathers and settles perfectly into the landscape, a quality which the reconstructed stone will not disclose for many decades, there is a saving on a three-bedroomed house of probably £80 between the reconstructed stone and real stone. The gap between a brick house and a stone house is close upon £200. This difference is partly due to the actual cost of the material and partly due to the rate at which the stones or reconstructed blocks can be laid. The latter are supplied in 16 sizes together with special cast quoins, heads, cills, chimney-caps, etc. The reconstructed stone has perhaps a slightly more mechanical appearance even than ashlar stone.

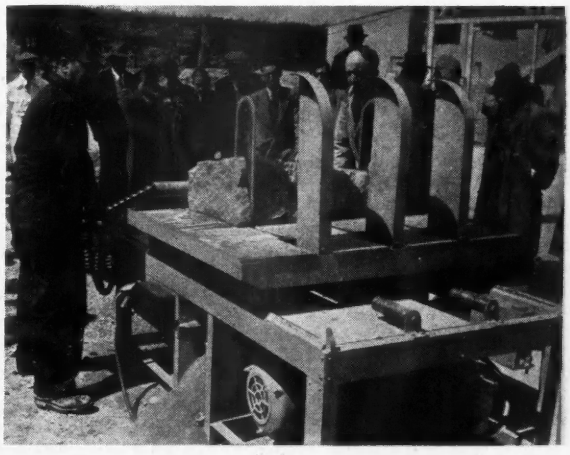
The ancient craft of stone walling as it is still practised in the Cotswolds.

In stone building the stone is supplied on the site in various sizes. It is chopped by hand (cost time) by banker masons and laid by a fixer. Talking to a foreman on a job and watching him place his great jumper stones, with perhaps two courses on one side and three on another, to see him popping in the little pinner stones to balance an irregularity, and to see the fillers being put between the brick inner wall and the stone face, is to realise what skill is inherent in the mason, and his patent enjoyment in his craft.

The walls which are solid compare in size with the cavity walls of the reconstructed stone, being a 4½ in. brick plus a 3 in. cavity plus 4½ in. reconstructed stone. In either case it is stated that the walls are both dry and warm. Both houses to-day have a dampcourse. Another point in the laying of stone in construction is the importance of ensuring that the grain is as it was when the natural oolite was laid down when the limestone was formed. If the stone is laid, as is very often seen in some of the Oxford Colleges or other buildings, on end, and laid green, the stone flakes in frost according to the slender strata as originally laid down. No good mason would ever think of laying stone against the grain.

MECHANICAL QUARRYING

To-day a great deal of quarrying is done mechanically. In June, at Happylands, near Campden, an exhibition of modern stone-cutting machinery was held under the auspices of the Gloucestershire Stone Committee. Various machines, some large and intended for large quarries, were demonstrated with various kinds of stone other than that coming out of the particular quarry. One of the machines (Siskol) was French. having been developed in the rebuilding of Caen, Normandy, another instance of the Normans again influencing our stone building. This firm also had a machine for cutting stone into standard sizes. Another firm, Daniel of Stroud, is making the Dunarm machine in Gloucestershire. The use of this is far more widespread.



MACHINERY IN THE PREPARATION OF BUILDING STONE : These two pictures were taken at a stone-cutting demonstration at Happylands Quarry, last June.

Some quarries content themselves with supplying only quoins, door hoods, lintols and fireplaces. Others, where the stone is in narrower belts, produce building stone. All the rough stone is used for filling and roadmaking; nothing need be wasted. How much the mechanical machine is used in a particular quarry depends on the type of stone present.

In both local authority and private work there is a definite obedience to traditional style in the stone houses, but the detail has varied over the years. The doors, which originally were oak or elm, oiled or weathered, and iron studded—ironwork being a particular craft of the Cotswolds—are still used, although the painted door which came in in Regency times is not out of place, and in fact in many instances gives warmth and colour to a winter landscape. The windows, which were originally leaded lights (circa 1550) with black iron surrounds, were followed by the wooden casements, and now are made of non-rusting metal often painted stone-colour or to match the doors.

Originally in lieu of guttering there were drip stones placed round the house under the eaves and a hard causeway. These were followed by wooden and lead guttering, often squared, and painted cast iron gutters. To-day the gutters are made of stone-coloured asbestos concrete which does not need painting. Where possible stone walls of about 2 ft. high—the old traditional height was about 4 ft.—form the boundaries of the gardens. These are mortarless walls with a now cemented coomber top, which not only look right but should prove of very little cost in upkeep. These stone walls, with their stone over-join, set off the Cotswold gardens to great effect.

The Cotswold councils are proud of their traditional art but they would be failing in a social sense if, in their desire for external beauty, they forgot the crying human need of a good modern home in which to live. The internal planning of the houses to-day is of primary consideration, as is the rate at which these buildings can be erected without undue capital cost or expensive maintenance in the future. The Cotswolds are rich in traditional builders and masons. The ancient craft of carving in limestone was perpetuated last year by carved plaques of the Festival of Britain sign by a Blockley mason fixed on each housing estate. The recent shortage of bricks has enabled stone masons to continue working when house-building might well have been greatly delayed.

Providing good homes in the traditional shell which will not belie the glorious heritage of the stone churches and villages, has been the aim of local building and planning authorities, and appreciated by many visitors. The inheritance of a superb landscape, buildings lay and secular, is enhanced by the craft of man.

God raised our lovely Cotswold Hills
  And saw that they were filled
With lots of lovely Cotswold stone
  That man might also build.
Then to that first great Architect
  Give praises that are due;
But don't forget that Cotswold men
  Deserve some credit, too.

COTSWOLD SLATING

A Slatter's Experience

THE following letter, sent to Mrs. Spurgin by an old Tetbury slatter (Mr. F. Robins), gives interesting information on the laying of stone slates:

At your request I will do my best to give you a list of the courses of stone slates, also any other information that I think may be of interest to you.

First I must explain that different areas used different rule sticks; thus, the names vary [the Tetbury district names are printed in the previous article.—ED.]

Owing to the weight of stone slates, it is necessary to have much more and stronger timber to carry them; the normal rafter is 3 in. by 3 in., set at 12 in. from centre to centre. Oak laths are then used to hang the slates on, which are hanging on the laths with wooden pegs about 2 in. long wedged into the hole in the slate. These holes are made with a tool called a "tile pick," this being a slow business; the tool for cutting slates to shape is a "tile hammer."

All the slates are sorted into their respective lengths before starting to lay any on the roof, then the laths are nailed on ready to take the first course. These are the largest slates which form the eaves. The next course of laths is put on according to the length of the next course of slate, allowing for bond; with large slates this should be from five to six inches, for medium-size slates, three inches, working down to one inch for the short slate with which you finish your roof off. Stone crees is then bedded in lime mortar along the ridge.

The inside is then plastered or torched between the laths with lime mortar to which cow hair is added.

UNESCO'S PARIS HEADQUARTERS

"UNESCO PRELIMINARY PROJECT," a booklet containing details and drawings of the plans and photographs of the model of the proposed Unesco headquarters in Paris, which have been rejected by the French building authorities, is now on sale at H.M.S.O., price 5s.

THE SMALLER ENGLISH HOUSE

IN THIS ATTRACTIVE BOOK* Mr. Turnor deals with the homes of "middle-class people," excluding "cottages on the one hand and the great mansions on the other"; but one wonders how many of the houses illustrated, some of them of considerable size, can really be regarded as "middle class" today. Kingstone House at Bradford-on-Avon; Burford Priory, Cornbury Park; Clouds; and especially Abbotsford—to take a few examples—come perilously near to the rank of "mansions"; and some others have already been converted into hotels or institutions. Mr. Turnor's selection is very discriminating, including many town-houses and terraces of the Regency, and embracing a large number of unhackneyed but none the less admirable examples. Although he names 1500 in his title as his starting-point, his first chapter, "Craft Building," describes several houses much older than that date. He deals effectively with timber-framed construction, and points out that medieval or "traditional" methods of building lasted well into the 17th century. The second chapter, "The Early Renaissance," describes the arrival of the professional architect," and "the second-hand Renaissance of Northern Europe" (a good phrase); but the author notes that "the mass of small building was not at all affected thereby," and that in the smaller houses "the worst extravagances were generally avoided."

ANGLO-CLASSIC

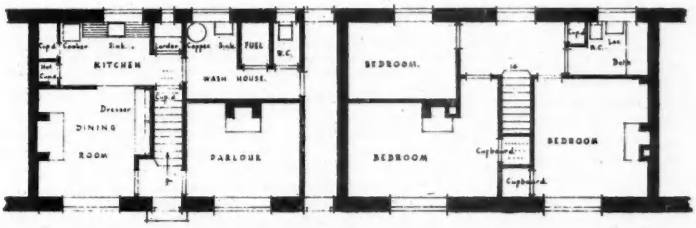
Next comes a long chapter on "Anglo Classic," taking us from Inigo Jones to John Nash. Mr. Turnor touches on the vexed question of Baroque architecture in England, and illustrates an excellent small example from Bath. He then discusses another thorny problem: whether Palladianism in English domestic architecture is a foreign "idiom" or not. The work of Robert Adam, James Wyatt, Holland, Soane and Nash, so abundantly treated in recent books on architecture, is fully described here; but the emphasis is on town houses and terraces rather than on country houses. James Wyatt is said to be "a near-genius!" Regency watering-places are fully dealt with. The interesting suggestion is made that it was during the Regency that "architecture generally took a wrong turning," just when it was coming to display "much in common with the more sensible products of the modern movement," including flat roofs and extreme austerity. Instead came "the romantics who were concerned to ruralise the towns" and these form the subject of the fourth chapter. Here, their "amusing" whimsicalities are treated with great thoroughness, in deference to the fashion of our day.

"The Victorian Age" is dealt with more summarily and shown at its worst, with the aid of hideous contemporary woodcuts plus photographs of ugly villas in North Oxford. The author holds that the Victorians did develop a distinctive style of their own. He limits this period to 1845-1885, deferring "The Domestic Revival" to his sixth chapter. Here we encounter all the usual names, among whom Morley Horder should have been included. Norman Shaw is mentioned as having created a feeling of "cosiness" in his houses, and also, unexpectedly, as the inventor of modern drainage. Lethaby's share in the movement is unusually well defined, Lutyens retains his halo and occupies three pages as against two lines for Guy Dawber, which seems disproportionate.

Lastly, we reach "The Modern Movement," which Mr. Turnor ascribes to a Central European origin rather than to any legacy from Mackintosh or Voysey. This final chapter contains a brisk attack on the extreme functionalist and nihilist views of some apostles of "Modernismus," and observes that the result of them has been "an unhealthy Neo-Victorian reactionary cult" In fact, this chapter is an admirable piece of cool, sensible and cultured criticism.

M. S. B.

*THE SMALLER ENGLISH HOUSE: 1500 TO 1939. By Reginald Turnor. Pp. viii, 216. Illustrated. (London: B. T. Batsford, Ltd.). Price 42s.

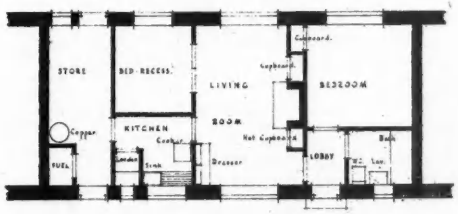


Plans of 3-bedroom house.

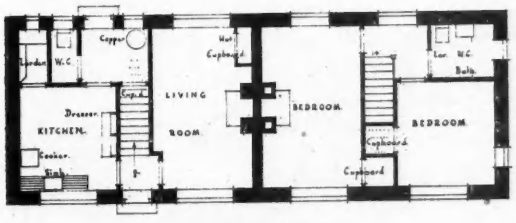
Cotswold Housing

HOUSES AT STOW-ON-THE-WOLD, FOR THE NORTH COTSWOLD RDC

THOMAS RAYSON, FRIBA, ARCHITECT



Bungalow plan.



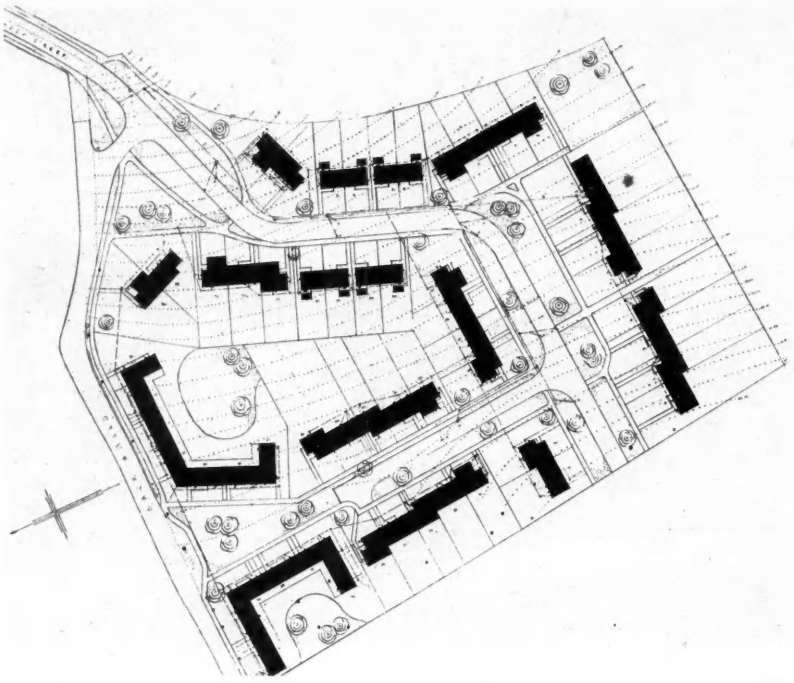
Plans of 2-bedroom house.

SCHEME AT STOW-ON-THE-WOLD : The site was laid out with regard to the contours, possible further development, and the appearance of the final result. The last was thought so important that the buildings have been constructed in stone, with stone-coloured concrete roof tiles. Boundary walls also are of stone. In such matters as the pitch of the roof the Cotswold tradition has been maintained.

While the types of houses are varied, the basic arrangement is : two-bedroomed Parlour house ; three-bedroomed Parlour house ; four-bedroomed Parlour house ; and one-storey dwellings for old people. Domestic hot-water is provided by Eagle-Sutton equipment with backboiler.

The architect is Mr. Thomas Rayson, F.R.I.B.A., and the general contractors Messrs. Arthur Bowd, Ltd., for whom the work has been admirably carried out by Mr. Chick ; Mr. Chick is solely responsible for the actual construction. Electrical installations were by the Midland Electricity Board, Stow-on-the-Wold. Stone dressings were supplied by the Gloucester Stone Company.

SCHEME AT BOURTON-ON-THE-HILL : This site has a long frontage to the Worcester-Oxford-road, and slopes from west to east, though from north to south the site is practically level. The lay-out is informal, and an attempt has been made to continue the feeling of the present village and to avoid the new houses appearing as an unrelated group. The total number of houses will eventually be seven two-bedroom type, 15 three-bedroom type, and five old people's dwellings. Construction is of local Cotswold stone, with roofs of grey concrete tiles. Walls are 15 in. thick, faced with random stone, and in order to effect economy the use of sawn stone dressings has been reduced to the minimum. Metal casements are set direct to chopped stone joints, and external cills are grey concrete



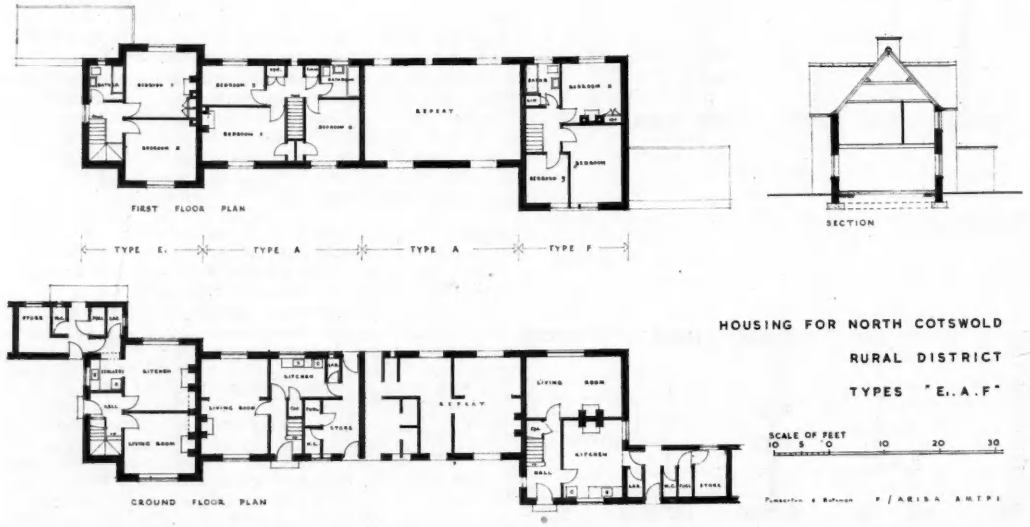
Block plan of scheme of houses at Stow-on-the-Wold for North Cotswold R.D.C. Thomas Rayson, FRIBA, Architect.

tiles. Roof pitch is 47½ deg., and roofs are felted. Plans are arranged to give a combination of types. All houses have ground-floor w.c s, fuel stores and shed. Cooking is by electricity with hot water from a back boiler in the living-room. Dressers and built-in bedroom cupboards are in every house. Front fences are avoided by the use of a low stone boundary wall finished in the traditional manner with stone coombers set in mortar. The quantity surveyor was Mr. H. W. King, A.I.Q.S. The architect was Mr. T. R. Bateman, A.R.I.B.A., A.M.T.P.I. The builders were Messrs. C. Steward and Son, Broadway.

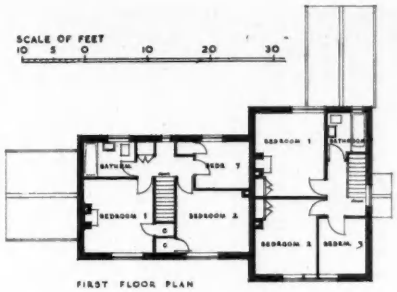
Sub-contractors were: roads, sewers, footpaths, J. R. Taylor, Ltd., Shipston; roof tiling, Broadbent and Stephens, Leicester; metal casements, Stephenson and Co., Ltd., Oxford; composition tile flooring, Neuchatel Asphalt Co. Ltd., Birmingham; grates and sanitary fittings, W. F. Bailey, Worcester; electrical installations, H. G. Beckley, Evesham; and ironmongery, Parker, Winder and Achurch, Birmingham.

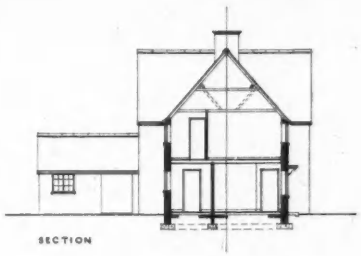
SCHEME AT BLOCKLEY: Placed on a difficult site with considerable cross fall, the houses, which take advantage of contours, are similar in plan to those at Bourton-on-the-Hill, but the walling is 11 in. cavity faced with reconstructed stone. This stone uses local limestone as its base and, as a result, is of quite a pleasant colour and harmonises well with adjoining traditional buildings. Slabs are made in six varying sizes, and this avoids the monotony of texture sometimes resulting from the use of this type of material. Roofs are of grey concrete tiles.

(*Continued on page* 868.)

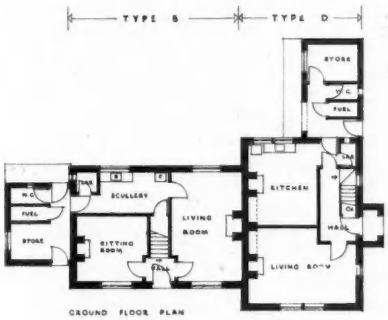


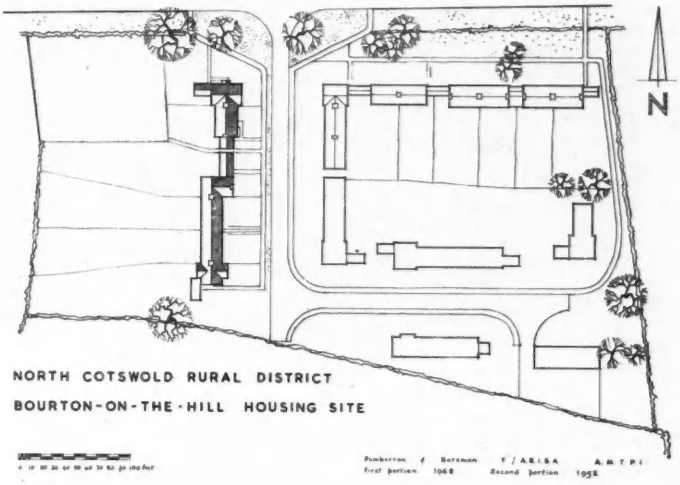
Terraced house plans at Bourton-on-the-Hill (see facing page). T. R. Bateman, ARIBA, Architect.





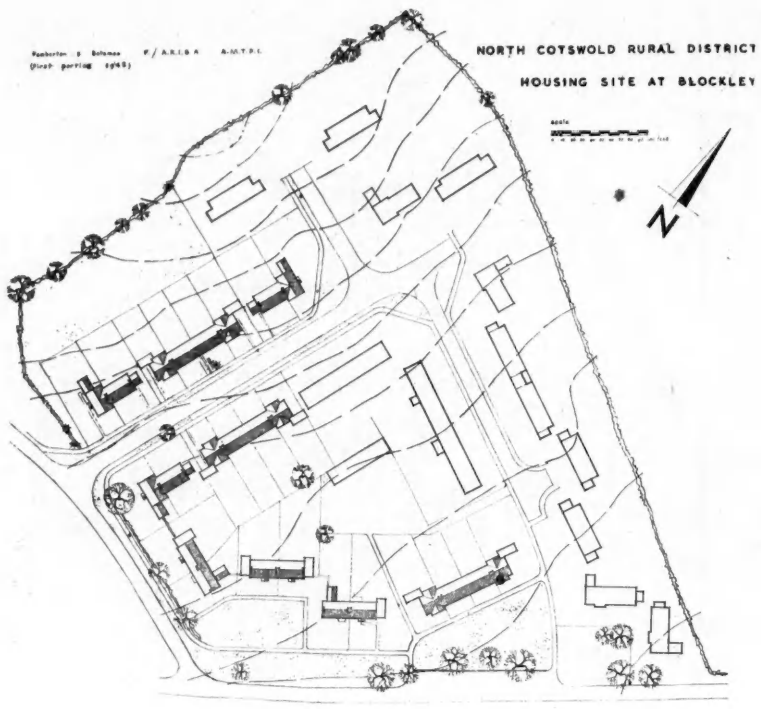
Left : Plans of corner type BD. Centre : Layout of Bourton-on-the-Hill site. Below : Terrace of houses (shown shaded on block plan).





HOUSES AT BOURTON-ON-THE-HILL, N. COTSWOLDS

T. R. BATEMAN, ARIBA, AMTPI (Pemberton & Bateman), ARCHITECT



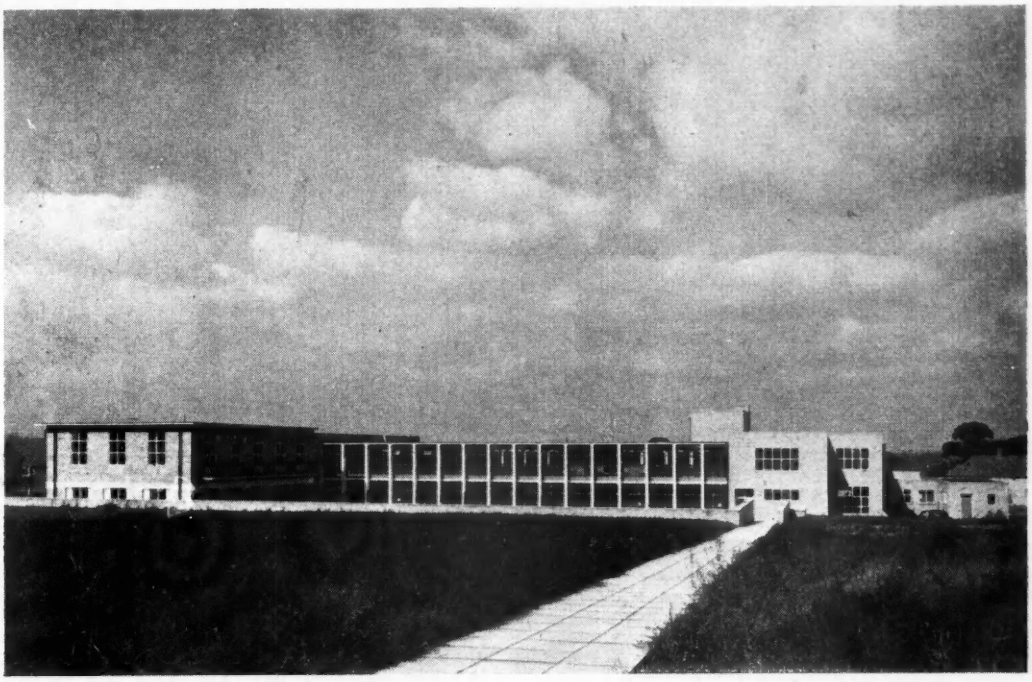
HOUSING SCHEME BLOCKLEY, FOR N. COTSWOLD RDC

On the left is the block plan of this scheme, in reconstructed stone. A general view is seen below, showing relationship to village and church.

T. R. BATEMAN, ARIBA, AMTPI, ARCHITECT

The quantity surveyor was Mr. H. W. King, A.I.Q.S. The architect was Mr. T. R. Bateman, A.R.I.B.A., A.M.T.P.I. The general contractors were Messrs. Geo. Brotheridge and Co., of Campden.

Sub-contractors were: roads, J. R. Taylor, Ltd., Shipston; electrical, F. G. and R. Huband, Evesham; roof tiling, Geo. Brotheridge and Co., Campden; grates and sanitary fittings, W. F. Bailey, Worcester; windows, Crittall, Ltd., Leicester; composition floors, J. F. Ebner, Ltd., London; and ironmongery, Parker, Winder and Achurch, Birmingham.

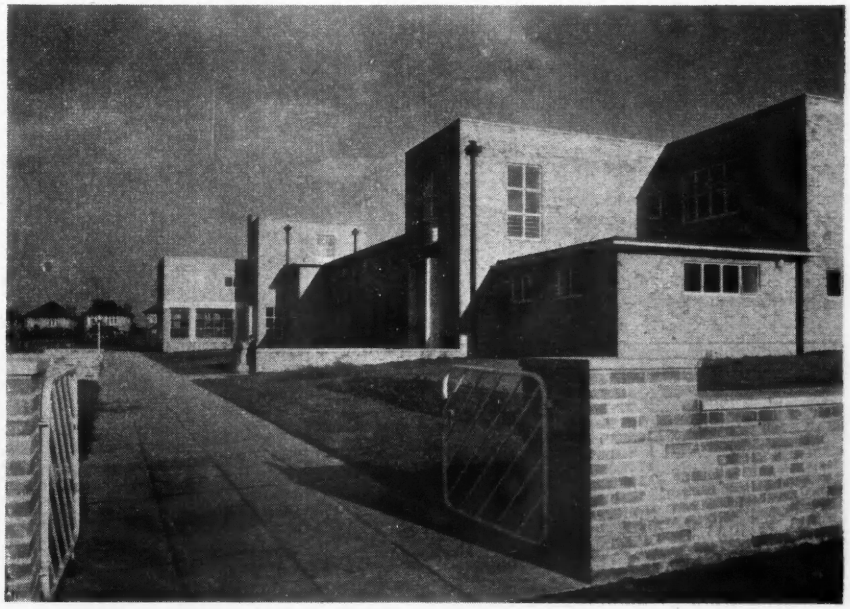


General view of classrooms and assembly halls.

RUXLEY MANOR PRIMARY SCHOOL, WOOLWICH

for the London County Council

ARTHUR W. KENYON, CBE, FRIBA, MTPI, ARCHITECT



View of the north side.

General view of classrooms and assembly hall.

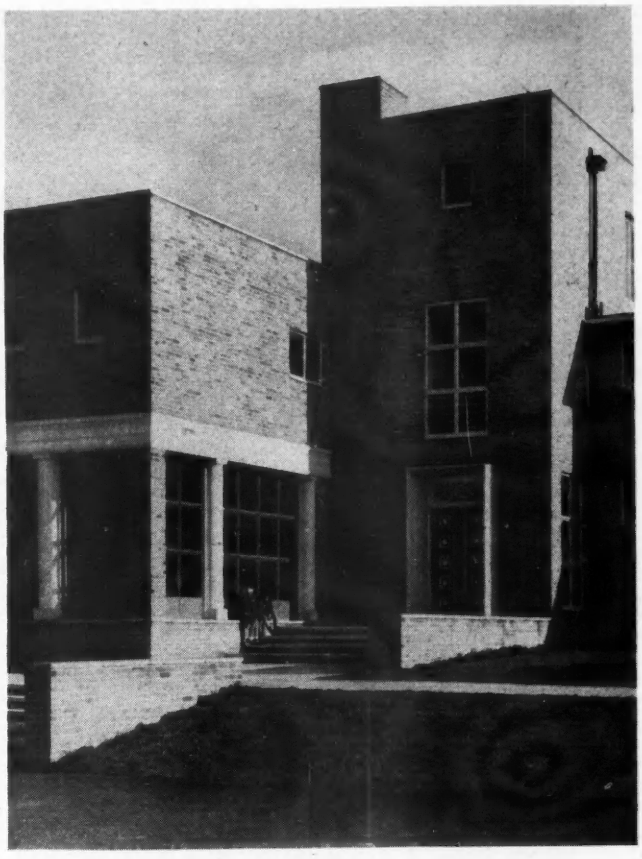
THIS school is one of two in the area of the Coldharbour Estate at present being developed by the Woolwich Borough Council and is mainly intended for children on the estate. The area available for the school was severely restricted and, out of what was available, space has been reserved for a nursery school.

Requirements for paved pitches and courts made it necessary for the school to be a two-storey building, and even with this there is still very little area remaining for planting or gardening. The site is bounded on three sides by the back gardens of surrounding houses and is open only on the west side. The ground slopes fairly steeply from south to north, and this together with the shape of the site determined the general layout of the school which runs mainly at right angles to the road along the contours, giving the classrooms practically a north-south aspect.

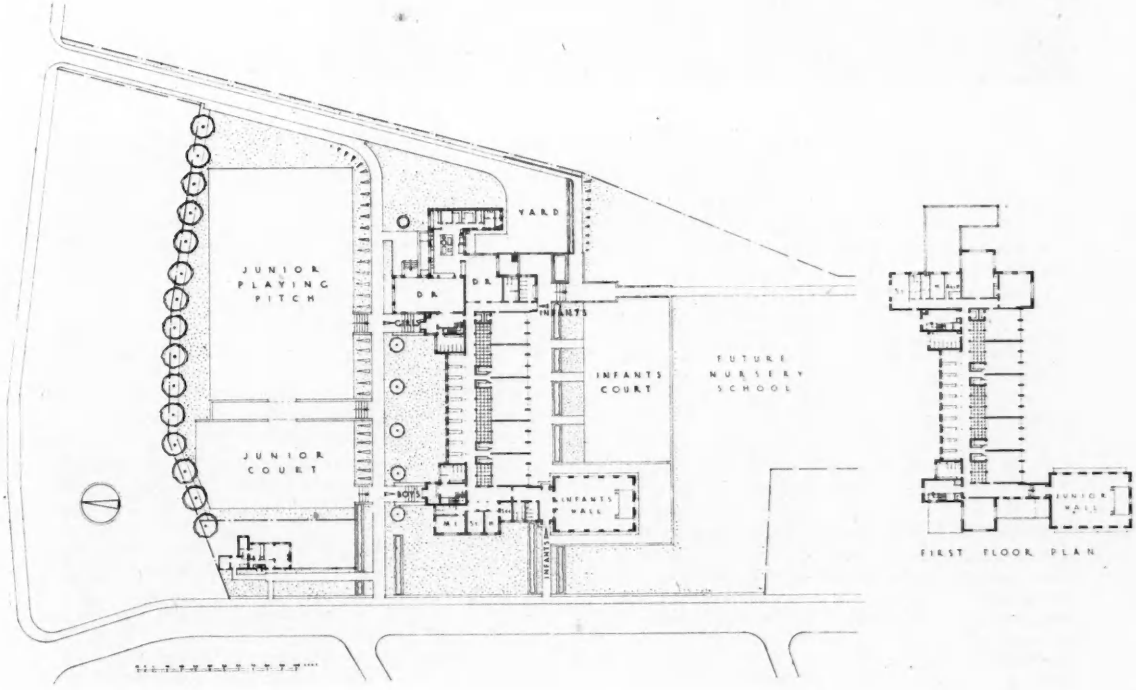
The school was originally designed to cost £170 per place, but had to be redesigned to meet the Ministry's revised ceiling of £140 per place. In this redesigning there was a general tightening of all circulation space such as corridors, etc., but the area of the classrooms, assembly halls and dining-rooms

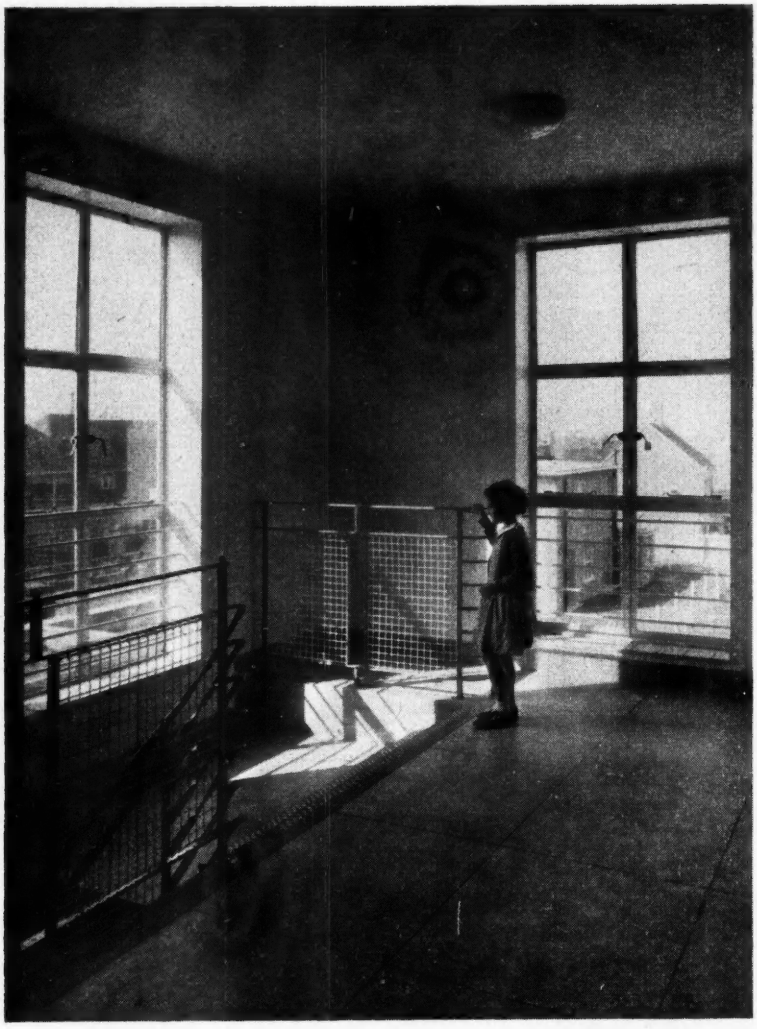
Waiting space and medical inspection room.

Corridor and cloakrooms.



Entrance to dining-room.
Below: Plans of the school.





Staircase and first-floor landing.

remained unchanged. The planning of the school fell naturally into two-storeys with accommodation for 200 infants on the ground floor and 320 juniors on the first. The extra space on the first floor for the juniors comes from the area over the dining-rooms and general administration rooms such as medical inspection.

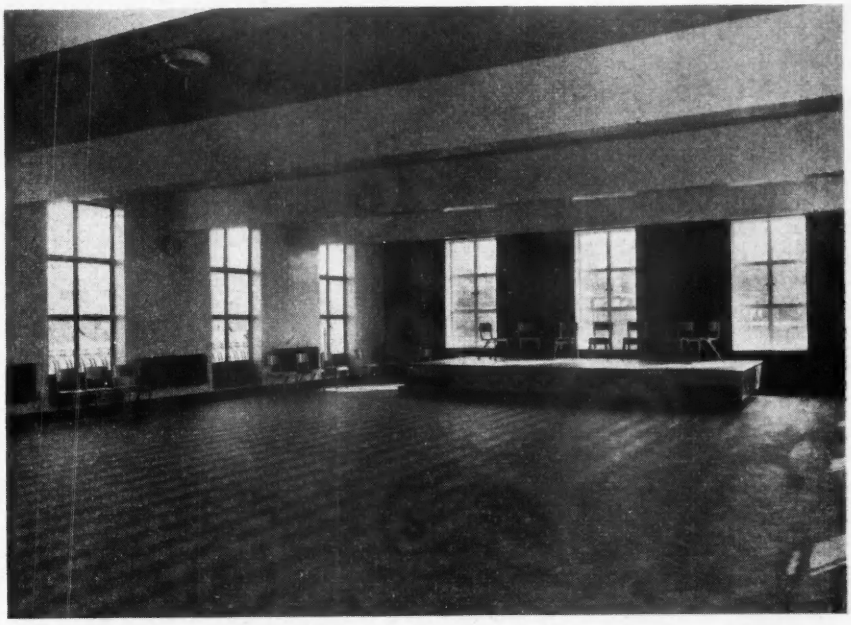
The main part of the school consists of a block of five classrooms repeated on both floors, and running parallel to these is a combined corridor and cloakroom, separated most of the length from the classrooms by an open court and linked at the ends and twice centrally by passages leading into classrooms. This method of planning gives light on both sides of the classrooms, at the same time keeping the whole plan compact and yet giving a feeling of openness. Standing in the corridor, it is possible to see through into the classrooms.

The general requirement of a classroom to-day is one of maximum light and this has been given in the main portion of the school where both side walls are completely glazed. The construction is of r.c. columns and beams which allows the maximum area of window possible. Where smaller areas of glass are needed, solid brickwork has been used as load bearing structure with r.c. beams resting on the walls. Externally the brickwork is in 2⅜-in. buff facing bricks built in bastard English bond. This gives a contrast on the two sides of the building between the mass brickwork on the northern elevation with its comparatively small cloakroom windows and the brickwork to the kitchen and assembly halls, and the simple vertical column treatment with glass infilling in the south elevation.

The general construction of the floors and roofs is in hollow tile, the latter covered with felt. Internally, simple finishes have been used for reasons of economy. The walls throughout are plastered and painted and the floors are of hardwood block except staircases where they are terrazzo and in the lavatories and kitchen where buff quarry tiles have been laid.

Considerable use has been made of colour, the shades of which were all chosen out of the standard range agreed by the L.C.C. for schools. In the classrooms the window frames are blue-grey, the end walls pastel colours. The doors, skirtings and book lockers are picked out in bright colours. Each classroom has a different combination of colours.

The kitchen is all electric and has serveries to the infant and junior dining-rooms. The school is heated throughout by low-pressure radiators from the boiler house in a basement under the kitchens, which



The first-floor assembly hall.

also houses the boiler supplying the hot water through the buildings. Modern school furniture was supplied through the Supplies Division of the L.C.C. and was chosen in conjunction with the architect.

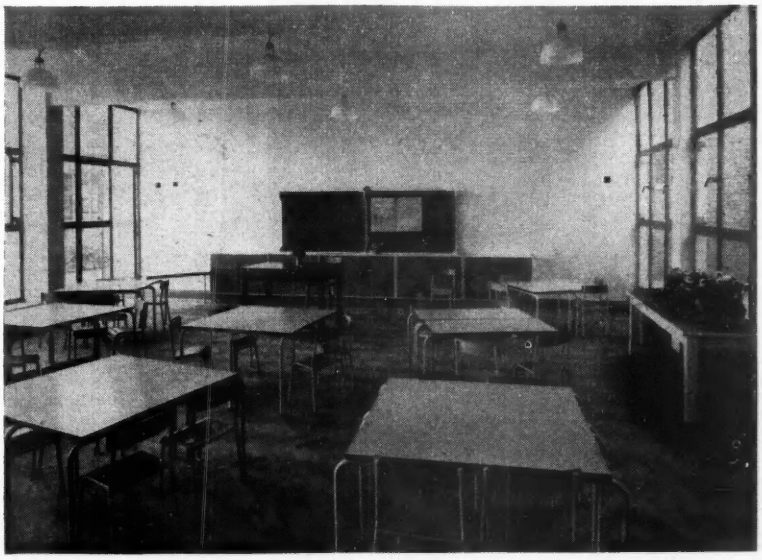
The external works formed part of the general contract, and turf laying to the grassed areas was all carried out (and was, in fact, taken over by the L.C.C. Parks Department) before the school was occupied, thus giving a far more finished appearance than is often the case.

The contract figure for the whole work, which was dated July, 1950, was £77,400 which included the schoolkeeper's house as well as the whole of the kitchen, etc. The cost per place worked out at £124.

Consulting engineers for the structure, heating and hot water were Messrs. Brian Colquhoun and Partners. The chief engineer, L.C.C., advised on electrical work. Messrs. H. J. Venning and Partners were the quantity surveyors.

The main contractors were Messrs. James Longley and Co., Ltd., of Crawley, Sussex. Following is a list of the sub-contractors :

Metal windows, ironmongery, James Gibbons, Ltd. ; gardening, Gilliam and Co., Ltd. ; pavement lights, Luxfer, Ltd. ; roller shutters, Shutter Contractors, Ltd. ; metal handrails, balustrades, etc., Clark, Hunt and Co., Ltd. ; hot and cold water, central heating, Z. D. Berry and Sons, Ltd. ; electric light and power, London Electricity Board ; w.c. compartments, Flexo Plywood Industries, Ltd. ; cloakroom fittings, Clark Hunt, and Co., Ltd. ; sanitary fittings, Dent and Hellyer, Ltd. ; facing bricks, Henry J. Greenham (1929), Ltd. ; terrazzo, Malacarp Terrazzo and Co., Ltd. ; wood block floors, Horsley Smith and Co., Ltd. ; tarpaving, Wainwright Paving and Contracting Co., Ltd.



RUXLEY MANOR PRIMARY SCHOOL, WOOLWICH

Typical classroom.

GUY'S-MAUDSLEY NEUROSURGICAL UNIT, MAUDSLEY HOSPITAL, S.E.5

ARCHITECT :
REES PHILLIPS, FRIBA
(SAXON SNELL & PHILLIPS)

West ward wing with connection to operating theatre suite.

THE unit, as completed, comprises two ward wings, each of 14 beds and one cot, making 30 beds in all, together with a third wing containing operating theatres, diagnostic X-ray, electro-encephalographic and laboratory accommodation, all arranged on the same level. The ward accommodation and the central offices are housed on the ground floor of a pre-existing building, the former private patients' block of the Maudsley Hospital, which is situated along the south side of De Crespigny Park. The operating theatre and laboratory wing is an entirely new single-storey building which projects at right angles southwards from the junction of the two ward wings.

The central offices are at the junction of the ward wings. Here we have the entrance doors in from the street, and the lift and central staircase which lead upwards to the higher floors of the building and downwards to an underground passage by which during inclement weather the other buildings of the Maudsley Hospital can be reached. A visitor on arriving in the entrance hall will see an inquiry hatch on the other side of which is the secretarial accommodation. Close by are the offices of the ward sister, the neurosurgeon and assistant neurosurgeon, a small waiting room, and toilet rooms.

From this central point the two ward wings lead, one westward and one eastward. Each is a mirror image of the other, and together they form a W-shaped plan. A corridor traverses their long axis, and all the accommodation for patients is arranged on the south side of this corridor, while most of the ward offices and services lie on the north side.

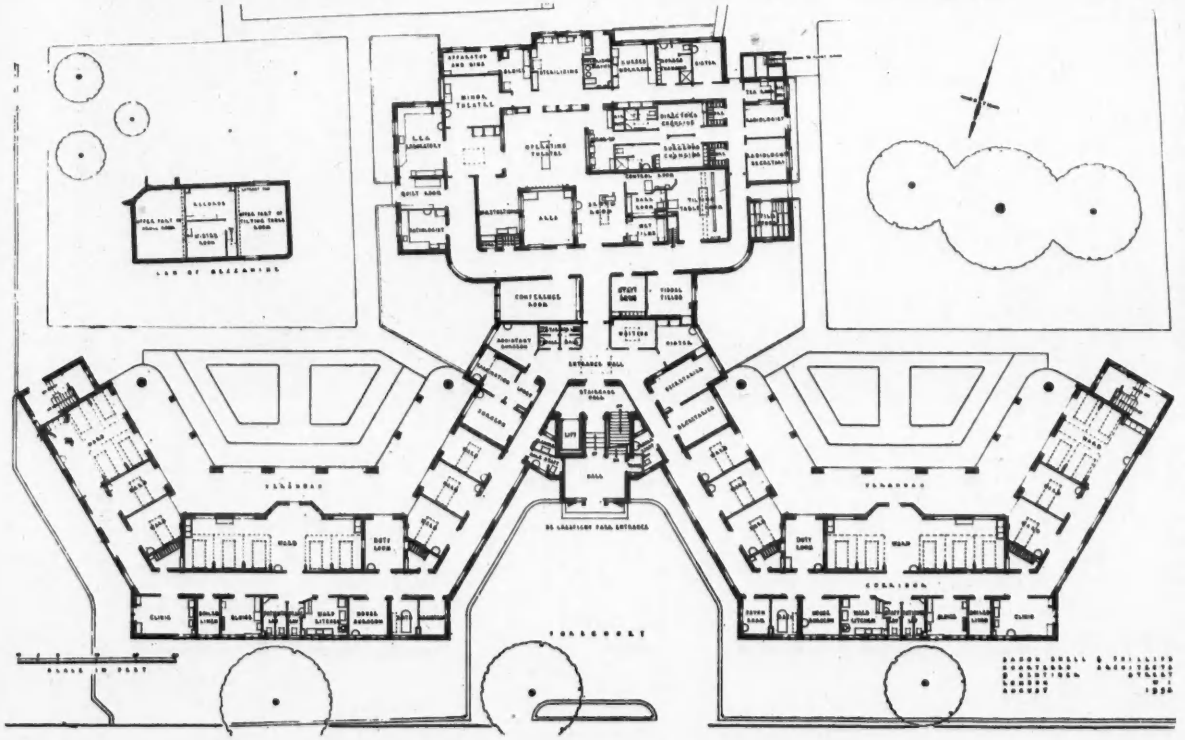
The ward services in each wing comprise a serving kitchen, linen and store rooms, bathroom, sluice room, and separate toilet rooms for patients and for staff.

There is also a small clinic room for dressings and minor surgical tests, to which patients can be wheeled in their beds.

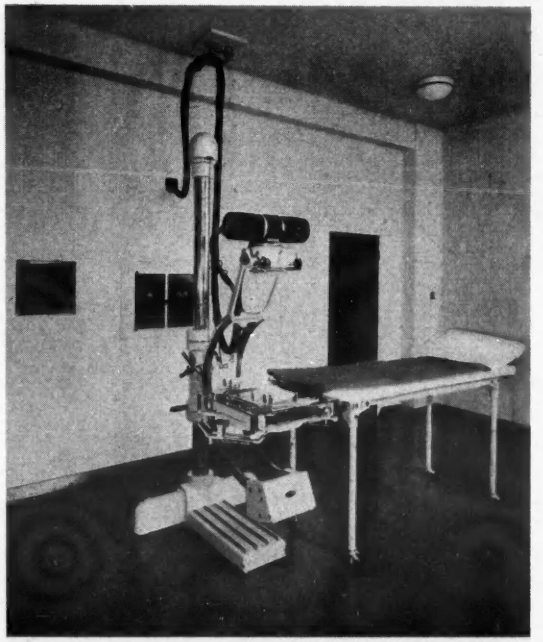
The architect when designing the operating theatre and laboratory wing devised an ingenious plan with the main operating theatre at the hub of the wing and the remaining accommodation grouped around it. The arrangement gives functional significance to the teamwork which is required in neurosurgery.

The theatre accommodation itself consists of a main theatre measuring 21 ft. by 19 ft., and a minor theatre measuring 14 ft. by 12 ft. 6 in. The presence of this second theatre will make possible the performance of minor diagnostic and therapeutic procedures while the main theatre is in use. To one side is the anaesthetic room in which patients are anaesthetised and positioned on the operating table before being wheeled into either theatre. To the west are the surgeons' changing rooms, and a scrubbing and gowning cubicle from which a full view can be had of the main theatre. A separate changing room is provided for visitors. To the south are the theatre staff's quarters, consisting of a workroom, a sterilising room, a sluice room, a nurses' changing room, and a theatre sister's office.

The main theatre itself is lined with pastel green tiles and a green terrazzo floor of a type which is electrically conductive to minimise the risk of anaesthetic explosions. A large theatre light on a T-shaped mounting, ensuring a wide range of movement, projects from the centre of the ceiling. On the north wall a large window gives indirect lighting; this can be blacked out as required with a covered blind. Glass-fronted instrument cupboards of traditional type line the south wall, and in a corner mounted at shoulder height is a small incubator for storing irrigating solutions at body temperature ready for instant use. A built-in X-ray viewing screen, a panel of electrical controls and water suction apparatus complete the equipment. The whole of the operating theatre accommodation, excluding the changing and work rooms, is artificially ventilated with filtered air which is warmed in winter, and, in the case of the main theatre itself, is cooled in summer, so that a constant temperature and



Plan of the unit.



Skull X-ray table.

humidity, thermostatically controlled, can be maintained throughout the year.

Adjacent to the theatre on its east side is the electro-encephalographic unit, consisting of two rooms, a recording room which is equipped with laboratory benches and a quiet room which is screened against electrical interference. This unit has been designed for two purposes ; firstly, for the routine investigation of patients from the wards, the patient being placed in the quiet room which is just outside the theatre precincts. Secondly, it is designed for electro-corticography or the recording of the electrical potentials of the brain exposed at operation, and for this purpose a direct view is afforded from the recording room of the operation area in the main theatre.

In close proximity to the main theatre on its north-western side is the radiological unit. This consists of two radiographic rooms, one of which with direct access from the theatre houses the skull X-ray table, and the other the tilting X-ray table for myelography and other forms of fluoroscopy.

There are no unusual features in the construction of the building, the external walls being of cavity brickwork. Floors throughout are reinforced concrete as is the flat roof. Internal partitions are formed of hollow terra-cotta blocks. Double windows with dark blinds between have been provided in the operating theatres.

The consultants for the mechanical engineering services were Messrs. J. Roger Preston and Partners, and for the electrical works Messrs. Couzens and Brown. Quantity surveyors were Messrs. Clevely and Bass.

The general contractors were Messrs. Allen Fairhead and Sons, Ltd., the clerk of works being Mr. E. Morris. Following is a list of the principal sub-contractors :—

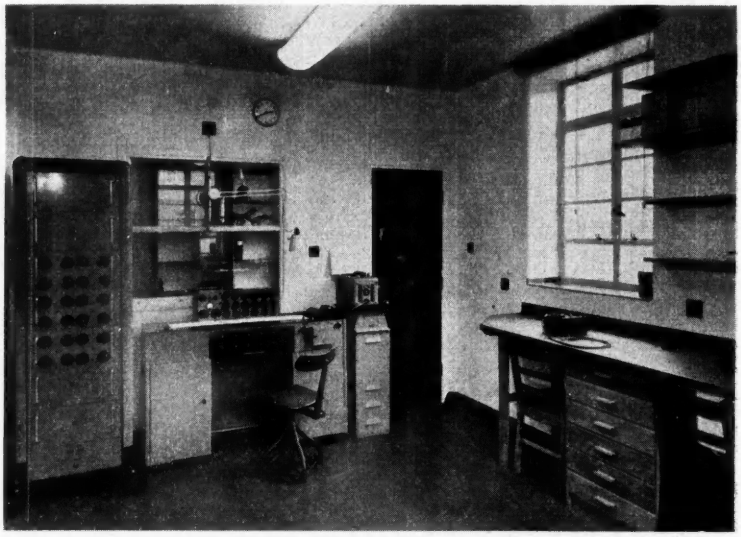
Heating, hot water and ventilation, J. Jeffreys and Co., Ltd. ; electrical installation, Read and Partners, Ltd. ; asphalting, The Limmer and Trinidad Lake Asphalt Co., Ltd.; reinforced concrete floors and roof, The Kleine Co., Ltd. ; windows, instrument cupboards, lockers, etc., James Gibbons, Ltd. ; tiling and terrazzo, W. B. Simpson and Sons, Ltd.; sanitary fittings, John Bolding and Sons, Ltd.; X-ray apparatus, Philips Electrical, Ltd. ; operating theatre blinds, dark blinds, and cubicle curtains, J. Avery and Co., Ltd. ; rubber pavings, The North British Rubber Co., Ltd. ; hardwood flooring, Horsley, Smith and Co., Ltd. ; cement glaze dadoes, Robb's Cement Enamel Finishes, Ltd. ; inset sterilising equipment, Chas. F. Thackray, Ltd.

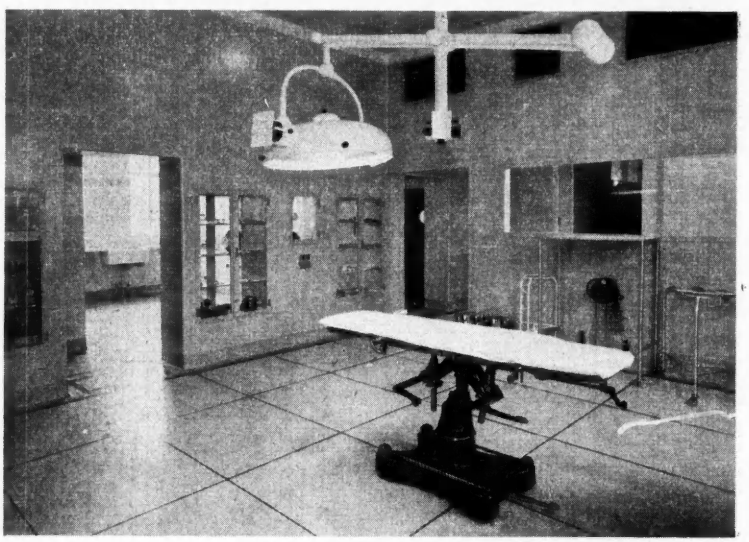
GUY'S-MAUDSLEY NEUROSURGICAL UNIT, MAUDSLEY HOSPITAL, S.E.5

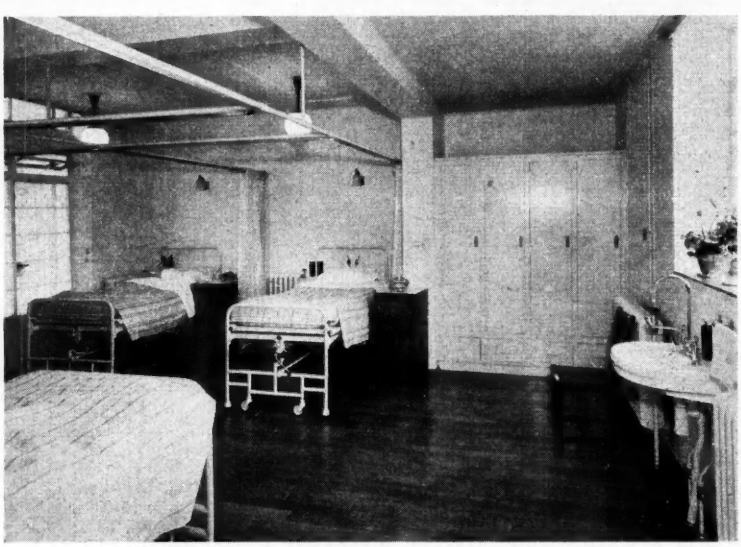
Top: E.E.G. laboratory, looking through to quiet room.

Centre: Main operating theatre.

Bottom: A four-bed ward.







ARCHITECTURAL STUDIES ABROAD

Foreign Scholarship Awards, 1952-53

SCHOLARSHIPS awarded by the governments or educational authorities of 17 foreign countries for the academic year 1952-3 will enable 72 British students to study abroad for periods ranging from four to 12 months. Among the subjects are history, economics, music, and architecture.

The awards, which are made and financed either by the government or educational authority, in most cases cover tuition fees and maintenance. The British Council assists in administering the scholarships which, in most cases, correspond to those which the Council awards annually to university graduates of those countries.

The countries are: Austria, Belgium, Brazil, Denmark, Finland, France, Germany, Iceland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and Yugoslavia. The award of a further four scholarships, including one in Mexico, will be announced shortly.

The following is a list of those persons to whom scholarships have been awarded for the study of architecture and includes the name of the university or college at which they received their training, the name of the country and proposed place of study, and the duration of the award:—

I. R. Cunningham, A.R.I.B.A., A.A. School and Durham University, Netherlands (Wageningen), nine months; M. Hough, Switzerland (Geneva), 10 months; I. G. Rogers, Robert Gordon's Technical College, Aberdeen, Brazil, four months; A. Simpson, Dip.Arch., Edinburgh College of Art, Denmark, eight months; P. H. M. Stevens, A.R.I.B.A., Edinburgh College of Art, Brazil, four months; J. G. W. Stoddart, University College, London, Brazil, four months.

OBITUARY

C. Wontner-Smith, F.R.I.B.A.

IT IS WITH REGRET that we record the death on December 2 of Mr. Cyril Wontner-Smith, F.R.I.B.A. Born in 1877, he began his career with the late Arnold Mitchell, F.R.I.B.A., and later worked with Sir Aston Webb and Sir Arthur Blomfield. He became an associate of the R.I.B.A. in 1900, and gained the Pugin Scholarship in 1902, which enabled him to study architecture in France, Holland, Belgium and Italy. He began practice on his own account in London in 1903. From 1908 to 1920 he was surveyor to the archdeaconry of Oxford, and from 1912 until 1947 he held the appointment of surveyor to the diocese of London. He had recently completed the restoration of the parish church of St. Dunstan with All Saints, Stepney. Other churches on which he was working were All Saints, Poplar, St. Mathias, Stoke Newington, St. Paul's, Bow Common, and St. Bartholomew's, Bethnal Green.

He designed a number of country houses and gardens and was responsible for the restoration and modernisation of Brocket Hall, Hertfordshire. He was a medallist and examiner of the Royal Institute of British Architects, of which he became a Fellow in 1913. He was also a past-vice-president and honorary secretary of the Architectural Association.

William Stanley Grice, M.C., F.R.I.B.A.

We regret to record the death, which occurred suddenly on December 8, of Mr. William Stanley Grice, M.C., F.R.I.B.A., of Pond-road, Blackheath Village, S.E.3. He was aged 62.

Mr. Grice began his career with Mr. W. A. Pite, F.R.I.B.A., and later joined the office of Sir Ernest George. His earlier works included country houses in Bucks, Surrey and Kent, a dairy at Shepherd's Bush, housing scheme in Somerset, alterations to business premises and flat conversions in London.

In collaboration with Mr. Denis Poulton, F.R.I.B.A., he designed country houses at Ashridge Park and Gerrards Cross and flats at Manor-street, Chelsea.

Mr. Grice was responsible also for the Silexine factory at Hammersmith, a block of flats at Islington for the Metropolitan Police, a squash rackets court at Wimbledon and a squash rackets and rugby fives court at Hampstead.

A. C. Kelway

WE REGRET to record, at the age of 86, the death of Mr. Albert Clifton Kelway, who was for many years secretary of the Incorporated Church Building Society.

SOCIETIES AND INSTITUTIONS

LIVERPOOL ARCHITECTURAL SOCIETY

Mr. Paul Cadbury's Address

A PEEP into the possibilities of the Liverpool of the future was given to members of the Liverpool Architectural Society, the other night, by MR. PAUL CADBURY, who based his observations on the redevelopment plans for Birmingham.

Many of the schemes dealt with in connection with that city, he pointed out, would be applicable to other cities. They included the building of 15-storey isolated blocks of flats, main roads by-passing suburban shopping centres, underground railway stations, traffic tunnels, reshaping streets with shopping arcades and the provision of recreation and theatre areas. He emphasised that railway stations could not be allowed in the centre of a city because of the site values.

Mr. Cadbury agreed that some of the plans would not be carried out for half a century, but the ordinary people must be interested in the planning of the future.

BERKS, BUCKS AND OXON A.A.

Oxford Summer School, 1953

THE COUNCIL of the Berks, Bucks and Oxon Architectural Association following the successful Summer School of 1951, have decided to hold another school during the last two weeks of July, 1953.

In addition to the normal measuring work, of which Oxford and the locality provide such a tremendous number of subjects, arrangements will be made for students who instead of studying one particular work may wish to embark upon a specialised study of form and construction, entailing the preparation of measured sketches and of some finished drawings of such features as doorways, wrought ironwork and fittings in College Halls and Chapels.

Lectures will be given during the evenings and it is hoped to arrange two tours of architectural interest in the area. Further details, when completed, together with application forms will be forwarded on request by either of the joint Honorary Secretaries who are Mr. E. Lassetter, L.R.I.B.A., Somerset House, Reading (Tel.: Reading 60076), and Mr. J. Brosgall, Secretary, Southern Regional Council for Further Education, Shire Hall, Reading (Tel.: Reading 2120).

BUILDING LICENCE EXCEEDED

Midland Architects Fined

AT the Birmingham Stipendiary Magistrates' Court on December 4, Messrs. George Bernard Cox and Bernard Vincent James, practising as Harrison and Cox, chartered architects, of Edgbaston, Birmingham, were summoned for exceeding a Ministry of Works building licence of £700 by £1,449. They pleaded guilty.

Mr. Colin Coley, prosecuting, said an application for a building licence for the conversion of a house at Frederick-road into Messrs. Cox and James' own professional offices was granted in September, 1951, and the work was completed in March this year. Defendants themselves reported the extra work done, and on March 4 asked if they should apply for a supplementary licence.

Mr. K. Mynett (defending) said there were special circumstances in this case which would enable the court to impose a nominal penalty. Before the work was started it was estimated that £700 would be enough, but when work began it was found that the premises had been damaged very severely indeed by bomb blast.

As work progressed, almost from day to day more serious bomb damage was found, and it was discovered that the whole structure had been shaken and shattered by the bomb. Extensive dry rot was also found, and the first floor of the building was in such a state that it was actually dangerous. Repairs had to be put in hand at once, not only to protect the structure but also for the safety of people who might be in the vicinity. That was the reason the licence was exceeded. The surplus was due to latent defects which had not been suspected at the start.

There was never any intention to do this extra work and hide it from the authorities. The fact that there would be an overspending was realised in January, 1952. Mr. Cox was discussing a supplementary licence with the builder in February, and on March 4, Mr. Cox wrote to the authorities and reported the matter, and asked for a supplementary licence. At the time the firm was in the throes of attempting to carry on their practice at their old premises in Cornwall-street, and at the same time prepare for the move. Mr. Cox was then holding, too, a very important position in a professional body which absorbed 50 per cent. of his time. The remainder of his time was devoted to clients' interests.

"They say," said Mr. Mynett, "that the last person to make a will is a solicitor. In this case, the firm's clients' interests were paramount, and they neglected their own interests for a matter of a few weeks."

The Stipendiary Magistrate fined each of the defendants the minimum amount of £50.

HOUSING PROGRESS REPORT

Figures for October

THE HOUSING SUMMARY, presented to Parliament on December 3 jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during October was 23,291, compared with 17,724 in October, 1951. In the first 10 months of 1952, 194,384 permanent houses were completed compared with 157,690 in the same period of 1951.

PROBLEMS OF SURVEYING INSTRUMENTS

A Discussion at the Royal Institution of Chartered Surveyors

A GENERAL meeting of land surveying members of the Royal Institution of Chartered Surveyors was held at the Institution recently, with Major-General R. L. Brown, C.B., C.B.E., in the chair. THE CHAIRMAN introduced the three speakers who were to open a discussion on "Instrumental Problems: Designers and Users." They were Brigadier G. Bomford, O.B.E., M.A., F.R.I.C.S., Reader in Surveying at Oxford University; Mr. T. Brian Smith, Principal Scientific Officer, Ministry of Supply; and Mr. V. W. H. Towns, Technical Director of Messrs. Hilger and Watts, Ltd.

BRIGADIER G. BOMFORD said the main purpose of the evening was that they should throw their criticisms at Mr. Smith and Mr. Towns, who represented the designers and the makers. But to begin on a friendly note, he thought modern survey instruments were generally excellent in accuracy and reliability. Considerable criticism of the instruments could follow only two lines—lack of standardisation and cost.

On lack of standardisation, Brigadier Bomford pointed out that if they lost a screw from a theodolite stand, it usually meant a new stand, and possibly a new theodolite.

On cost, he said they wanted to see their instruments costing less. There was no suggestion that instrument makers made an undue profit. If the instruments cost too much, it was because users gave the wrong specifications or did not buy enough instruments—and that was where they could get together and decide what was the immediate need, what was the minimum specification, and what they wanted; and they could then all ask for the same thing. By "cheap" he did not mean a reduction of 5 per cent. or 10 per cent., but a reduction *to* 5 per cent. or 10 per cent.

A FIVE SHILLING COMPASS

As an example he produced a plane-table compass. The plane-tabler, he said, needed a compass not because he would trust it, but because he wanted to do a plane table resection; he was not relying on the compass, and an error of one degree would be acceptable. When Brigadier Bomford was young, Woolworths had one-penny, threepenny and sixpenny counters, and it was possible to buy on the threepenny counter a compass which would give an answer to within one degree. The compass which he held in his hand—a four-inch compass—cost £5 12s. in 1946, without the box; a similar five-inch compass would have cost £7 18s. They were made by a reliable firm of instrument makers—and there was no suggestion of undue profit! But if the users agreed among themselves that they wanted a compass which was right to the nearest degree, and if they bought a reasonable quantity, all from the same man, it might be made for 5s., which was about 2½ per cent. or 3 per cent. of what he had paid for that in his hand.

Brigadier Bomford said he had received a letter from Mr. Tomalin, an engineer, who was present at the discussion. Mr. Tomalin's work was largely laying out right-angles, and he needed an instrument which he could centre and which would lay off a right-angle to the nearest half-minute. The old optical square, which cost £5 in 1946, was no use to him, because you could not centre it and it was good only to the nearest degree. He wanted something fairly simple—not a theodolite, with lower and upper plates, horizontally divided circle, slow-motion bubble, micrometers, verniers, and so on, but something which the low-paid man could operate. He wanted something for £25, not the theodolite at £250. If enough people wanted it, and they all went to the same man for it, Brigadier Bomford thought such a need could be met.

He wanted to know why manufacturers put their instruments in polished wooden boxes instead of metal domed containers, such as that for the Wild and popular small tilting level.

If one bought a car, one was given an instruction book. They were never given an instruction book when they bought an instrument, but such a book could be very useful. Although it was a bad thing to take a theodolite to pieces, there might be times when it was necessary and when guidance would be very useful.

THE MANUFACTURER'S APPROACH

MR. V. W. H. TOWNS said he had prepared a paper entitled "The Manufacturer's Approach to Instrument Production To-day," and he thought it would be best if he read it before he dealt with points raised by Brigadier Bomford.

It was customary to praise the instrument maker for his skill and craftsmanship. Those qualities were still present, but they were expressed in a different way. The technique associated with the old instrument maker's craft was still used in the experimental workshop, but production technique in the factory to-day was very different from what it was, and possibly different from the conception held by many people of how the instrument maker sets about his task.

It was important to understand this before criticising to-day the manufacturer's reluctance to meet special requests for modifications to design, or in putting forward criticisms of the cost of items manufactured in relatively small quantities. There were two main reasons for the different approach of modern manufacturing technique—first, technical, and second, economic. Under technical must be classed, first, the availability of new materials, new machines, and new manufacturing methods; and, secondly, the advent of glass scales and optical methods of reading, which had caused radical changes in instrument design leading to smaller and lighter instruments.

MODERN METHODS

Economically, the rise in manufacturing costs, especially labour rates, had forced instrument manufacturers to adopt modern methods which might almost be termed mass production methods. In the old method, many parts commenced as sand castings. These were filed up, sometimes machined or turned, marked-off on a surface plate, perhaps drilled with a hand drill, and fitted together. The components were than separated, numbered, finished and assembled. Each instrument was a separate creation. Under these conditions it was easy to modify or add, and equally a new design could be made and tried out at little more cost than that of a normal instrument.

Turning to modern production technique, the greatest change was probably that of the raw materials available to the manufacturer. There had been a considerable growth of auxiliary trades which now fed the manufacturer with semi-finished raw components in a condition which left him a minimum of subsequent machining and finishing. The most important were the diecastings, both gravity and pressure. To these must be added extrusions, rods and bars in almost any desired shape, stampings from sheet metal bent to shape if necessary, and, more recently, precision castings by a number of methods, the best known of which, the "Lost Wax" process, was used by the ancient Egyptians 4,000 years ago and which had recently been revived for producing difficult shapes to reasonably close tolerances in the unmachinable alloy steels. The makers were taking advantage of this technique today, where it was economic, in producing certain of the more complicated shapes of the modern surveying instruments.

Most of the processes quoted demanded expensive tools, which could be justified only if the quantities to be produced were large. The same applied to the machining processes within the factory.

The whole factory organisation was based on specialist workers, each skilled in his own craft. Every component was specified by its drawing giving limits on dimensions and quoting auxiliary processes, such as hardening or heat treatment. Production was guided by Production Control, which produced loading charts, job instructions, time schedules and progress reports. One surveying instrument might have 200 different components and the factory might be handling up to 200 different kinds of instruments.

It was difficult to interrupt such an organisation, Mr. Towns continued. It was, therefore, customary to run an experimental shop, staffed by selected instrument makers, who were much more flexible than the average factory worker. It was this shop which had to deal with modifications and special requests, in addition to producing prototypes of new designs. The technique employed here was very similar to that of the old instrument makers and, therefore, could not avoid being expensive.

CRITICISMS WELCOMED

After this outline of the modern production organisation, Mr. Towns said, it might seem paradoxical to say that the instrument manufacturer today was probably more receptive than ever before to criticisms and suggestions arising from users of the instruments. The reason was obvious. The designs produced to-day had to be fixed by virtue of the cost of tooling up. They therefore went to great pains to find out what was the best form for the design, and for that they welcomed criticisms and suggestions from users. New ideas could be tried out experimentally in the development and research sections which most manufacturers maintained. But, before the adoption of these new ideas, market research must disclose a relatively large demand. He added that he did not want what he had said to give the impression that designs had to be fixed indefinitely.

MR. T. BRIAN SMITH said was it his privilege to present one or two thoughts which might be in the mind of the development engineer at the present time, not in contradistinction to Mr. Towns, who was also intimately connected with design and development, but because his (Mr. Smith's) approach and outlook towards research might be different in some respects in that it was not hampered by the purely commercial motive. The overall effect of that might be that they would see the results of Mr. Towns' work to-day whereas they might have to wait until to-morrow to see the results of the work upon which he himself was engaged.

If they admitted this subtle distinction in outlook and possibly, therefore, approach to the problems in hand, they might spend the next few minutes looking to to-morrow to see where modern advances in science were likely to benefit the surveyor in his work in the field.

THE ELECTRONIC AGE

Just as over the years they had passed from the age of stone to the bronze age, and then to the steel age, they might say that in the middle of the twentieth century they were passing, if they had not already passed, into an electronic age, the developments of which were rapidly having their effect not only in engineering and allied fields, but also in everyday domestic life.

Mr. Smith said the period of World War II, and even perhaps a little before it, brought about other changes of immense importance in the general field of observation. The optical range-finder, as they all remembered it, was, it might seem, except for certain limited and specialised applications, almost relegated to the museum, to be replaced by radar and other electronic techniques in the seeing of targets and obstructions and for the measurement of distances. Survey had not been slow to take advantage of these new techniques, as was seen from their practical application to the problems of the control of Air Survey Photography.

It was also probable that the air survey camera, as they knew it at present, had reached the peak of its development using the existing and more commonly known techniques. What, then, of the camera of to-morrow? It seemed not unlikely that this would be on the lines of an electronic camera with optical lenses of comparatively short focal length forming an image on the photo-cathode surface of a magnifying image-converter tube, and utilising electronic shutters. It seemed certain to him that if they were to make any serious advances in the technique of air photography and the air survey camera, future development must follow along those lines.

Mr. Smith suggested that a not uninteresting thought—and it was just a thought—was the possible application of similar techniques as an aid in plotting from air photographs, where the plotting machine might be entirely automatic once the initial settings had been made; and where, of course, a single operator could do the setting and look after a battery of such machines.

DISCUSSION

MR. JOHNSON (Australia) said one of the great advantages which the designers had brought to the profession had been the greater portability of instruments. They had lightened the surveyor's load both literally and figuratively. He recalled the great weight of the instruments which they had to carry up into the mountains for practical work in the old days and compared it with the weight of modern instruments. Another way in which designers had helped had been in enabling surveyors to work at greater speed.

He insisted that for the average surveyor the instruments must be kept in a simple form. That was especially true for surveyors working in remote areas, who might have to do their own repairs if anything went wrong with the instruments.

MR. WILLIAMS (Cambridge) agreed with Brigadier Bomford about the need for an instruction book. He also raised a point about the British attitude towards Continental instruments. He would not have mentioned it, he said, but for the fact that it was the Continental people who had first provided the sort of case which Brigadier Bomford wanted. In other things, too, they had taken the lead.

In official circles in this country there was a grudging attitude towards what had been done on the Continent, and he could not understand it, because Continental instruments could not be obtained here in any event. In his experience, there was collaboration between makers in most circles. Was there some deadly rivalry involved in the secrets possessed by instruments makers in this country and those on the Continent?

MR. WILLIS said he had a short contribution to make on the subject of boxes versus sharp metal domes. He had spent much of his life sitting on a box taking other people's observations—and that was an important point!

MR. THOMPSON (University College) said Mr. Smith had made a most important suggestion about the electronic camera which should be taken extremely seriously. He had not mentioned its various advantages, but, in fact, it was not only a practical suggestion, but an extremely important one.

MR. TOMALIN said it seemed to him that the air invasion of the land surveyor's territory was progressing, and he wondered whether the instrument makers could measure that invasion as it affected the supply of instruments. With the camera attack, there must in the course of time be an elimination, to some extent, of the man with the instrument on the ground.

He was concerned not so much with the man who measured to produce a plan upon which the architect could work as with the man on the site. The general approach to setting out construction work was on right-angle lines.

The work was not on one plane, and there was room for the instrument manufacturer and designer to produce a simple instrument—a baby theodolite—which was not complicated, whereby the man on the site could turn 90 degrees and elevate and depress the telescope and use the instrument for levelling as well.

THE CHAIRMAN dealt with Mr. Tomalin's point that the invasion from the air would drive the surveyor off the ground. He said his belief was exactly the opposite, as was proving to be the case; and that was probably due to the fact that the world was largely unsurveyed. The camera had enabled the surveyor to do much more in a much shorter time, and many more surveyors were needed to provide the necessary ground control for air mapping.

REPLIES TO QUESTIONS

In his reply, MR. TOWNS said the points about cost, raised by Brigadier Bomford, had largely been dealt with in his opening remarks. Essentially it was a question of quantity, and if users could get together and agree on a design, and perhaps if manufacturers could get together and agree on who was to make it, the quantity going through a factory would be sufficient to permit the use of the very cheapest production methods, with a resulting reduction in cost.

He was grateful to those who had suggested a special instrument to lay out right angles. Again, it was difficult to know what the demand for such an instrument would be, and one would be inclined first to suggest that they should look at existing instruments—simple theodolites—before asking for a special design.

On the subject of boxes, Mr. Towns said manufacturers tried to make packing easy. The easiest was the Swiss method of vertical packing inside a domed box. His firm preferred horizontal packing, which was kinder to the instrument, in their opinion, than the vertical packing without support.

Manufacturers to-day tried to provide an instruction book, but they were a little cagey about telling the user too much about how he could get inside the optical scale theodolites.

Mr. Towns said he fully agreed with Mr. Williams that the improvements they were all using had largely been initiated by German and Swiss makers. To-day, however, British manufacturers were doing their best to maintain their research departments, which they all hoped would promote original ideas in the future.

MR. SMITH said there were one or two points he wanted to emphasise. The first was the question of letting the designer or research engineer know what the user wanted. That was the greatest difficulty they had in a research department. There was a real case for trying to get some sort of standardisation of requirements, apart from standardisation of design.

The problem of the metal box was interesting, although Mr. Willis had given the best answer. During the war they had to design boxes for use by the Army, and the requirement that a box could be sat on ruled out the domed box.

Both manufacturers and users were interested in the question of standardisation, and it was a prominent question at the Ministry of Supply. They were considering standardisation not only within the United Kingdom, but also with the United States, Canada and other N.A.T.O. countries.

IN PARLIAMENT

The Blitzed Cities

ON the motion for the adjournment, on December 4, MR. MORLEY raised the question of the reconstruction of the blitzed cities, the citizens of which, he said, had been disappointed in their hopes that they would be given priority in capital and material allocation for rebuilding as soon as the war was over. It was true that in most of the blitzed cities a considerable number of houses had been built since 1945, but very few offices and shops had been reconstructed.

They were disappointed when they heard that the allocation for new capital construction for the 18 blitzed cities next year was to be only £4¼m. He understood that of that sum £2m. was a carry-over, so that actually there would be only £2¼m. of new capital construction in the blitzed cities next year. He was informed that the annual capital expenditure of the country was now running at the rate of some £2,000m., and £4¼m. represented only 0.2 per cent. of that figure. Was that the fulfilment of the pledge that the reconstruction of the blitzed cities would have priority after the war? He pleaded for more capital expenditure for the very urgent tasks of reconstruction of the blitzed cities, which ought to be put in hand.

MR. MARPLES, the Parliamentary Secretary to the Ministry of Housing and Local Government, said that the £4¼m. was calculated at precisely twice what the Socialist Government gave to the blitzed cities.

MR. MICHAEL FOOT: It is not true.

MR. MARPLES: The Hon. Member must not become so wild, because the work done in 1949 and 1950 was £2,300,000, in 1951 it was £3¼m., in 1952 £4¼m., and in 1953 it will be £4¼m. That allocation would be matched in steel. In other words, it will not merely be a paper allocation which cannot be carried out because of a shortage of essential ingredients in building. It is an allocation that is possible to reach because we have provided the materials. We have been able to increase it because productivity in the building industry has risen, because the flow of materials to the industry in sites all over the country is better, and because confidence in the industry is better.

Continuing, he said that members might congratulate the operatives, who were getting greater productivity in the building industry, and congratulate the Government on enabling the blitzed cities to do twice as much as they did under the previous Government. The test was a question of what resources and materials were spent in the blitzed cities from January 1 one year to December 31 next, on all projects, whether started earlier or begun during that period. It was wrong to take the value of the work started. For example, if a £10m. power station was started at Southampton on December 31, 1950, would Mr. Morley say that that amount of work had been done? It would take five years to finish that work. It was also wrong to take the number of projects finished. If that power station was finished on January 1, 1957, no government could claim that the whole £10m. belonged to any particular year. What had to be done was to take the uncompleted portion of the work at the beginning of the year, add to it the value of the projects started or licensed during the year, and deduct from it the uncompleted portion of the jobs at the end. In that way one arrived at the amount of building work done in any particular year in any particular area.

In 1953, taking it as a test, they found that they would probably licence — and in giving that figure he was not committing the Government—about £4¼m. worth of work in the blitzed cities, of which £2¼m. worth would be done in that year, and another £2m. which was carried over from last year would be done, making in all £4¼m. The remaining part of that which they planned for 1953 would be done in 1954. In 12 months they had doubled what the previous Government did. Perhaps they would be able to do better if they got greater productivity.

British Timber for Wallboards

During a debate on the timber industry on December 5, MR. IAN ORR-EWING spoke of the need for alternative markets for the lighter woods which were bound to be cut in the process of thinning. Up to recent months the market for lighter scantlings and the small woods—that part of the thinning process which was of such a light nature that it could not be used for pit props—had been found by small wood pulping undertakings and to a certain extent by the wallboard and hardboard industry.

Lately this industry had been unable to absorb as much of the home-grown product as they would wish because of the heavy imports of finished wallboard from abroad. He was delighted to see that we were using such a lot of wallboard because it implied that our housing programme was succeeding and going ahead, but he, like those who lived in the houses and those who built them, would like to see far more wallboard made from British timber instead of foreign currency being used to purchase foreign-made wallboard.

SIR THOMAS DUGDALE, Minister of Agriculture, said that one of the most important markets for small materials was board mills —mills producing boards such as hard board and insulating board, which was used extensively in the building and other subsidiary industries. These mills were capable of using material which was both smaller than pit timber and unsuitable for the pit wood market. At the present moment there were three such mills in existence, all in the south of England, but the Forestry Commission and other interested bodies were discussing the possibility of establishing more of these mills in different parts of the country. There were two projects in Scotland which had been investigated in considerable detail. Up to now no additional plant had been erected, but in the view of the Forestry Commission and the trade there was definite scope for expansion in this field.

Water Pipes Shortage

On December 2 MR. MURRAY asked the Minister of Housing and Local Government if he was aware of the shortage of metal water pipes in the County of Durham; that such shortage was holding up the completion of houses; and what steps he was taking to speed up supplies.

MR. MARPLES, who replied, said that the Minister was aware that difficulties had arisen and was taking steps to deal with them.

Fitzharris House

On December 2 SIR RALPH GLYN asked the Minister of Works whether he was now able to make a statement in regard to the future of Fitzharris House, Abingdon.

MR. ECCLES said he had consulted the Ancient Monuments Board for England about Fitzharris House. They had said in their report that they regretted that the house was allowed to get into its present neglected state and would gladly have seen it preserved in good condition, but in view of the present state of decay of the house, they did not consider that there was now any justification for spending money from the Ancient Monuments Vote upon its preservation. They concurred with the suggestion that the house should be demolished. The Minister of Supply had, therefore, given instructions for its demolition.

Prison Building

In the House of Lords on November 18, during a debate on conditions in prisons, the LORD CHANCELLOR said that the prison commissioners had obtained approval for a programme of new building comprising two secure training prisons, each for about 300 men, two secure boys' Borstals for 150 inmates each, two girls' small Borstals and a special psychiatric establishment for mentally abnormal prisoners.

A site for the first of the secure training prisons had been purchased at Everthorpe Hall, near North Cave, Yorkshire. Building would commence next year, and would be completed in about four years. The search for a second site continued, and it was hoped to start work on the prison the year after next. A site was found for the psychiatric institution, but had to be abandoned because planning clearance was not given, and the search for another site was in progress. Work on the permanent Borstals was not expected to begin until 1955. Plans had been made for building open camps, but there had been local objection to the building of three of the five proposed, and a public inquiry would be held into each.

SAVING £50 A HOUSE

Building Research Station's Successful Experiment at Norwich

THOUGH final figures are not yet available, the success of the experiment in house-building with the aid of a rail-mounted tower crane, which is being conducted by the Building Research Station of the Department of Scientific and Industrial Research on the North Park Avenue estate, Norwich, was already apparent on December 5, when Mr. Marples, Parliamentary Secretary to the Ministry of Housing and Local Government, paid a visit to the site. Mr. Marples was accompanied by the Lord Mayor of Norwich, Alderman W. E. Walker.

The scheme comprises 32 two-storey traditional houses, in which the houses are laid out in a rectangle in two terraces of 12 and two terraces of four; the crane works inside the rectangle, and the right-angle turns involved are negotiated with the aid of turntables. Work began on September 8, the first tenants moved in on November 16, and already more than three-quarters of the houses are roofed-in.

The number of man-hours expended for each house to the roofed-in stage has been 700, against the national average of 1,300, and although the exact saving in money cannot be ascertained until all the houses are completed, at the present stage it is estimated at £50 a house. The building work is being carried out with the Norwich Corporation's direct labour organisation, under the direction of Mr. H. C. Rowley, M.I.C.E., M.I.Mun.E., the city engineer.

The houses are being built entirely of traditional materials, and the only large prefabricated units moved in one piece by the crane are sections of chimney stacks, weighing up to about half a ton, which are built on the site. These can be placed in position in a few minutes with the aid of the crane, which immediately afterwards can be switched to handling a reinforced concrete lintol, a load of bricks or mortar, or in fact any of the other materials required as the work progresses. These are picked up from the site and positioned within a matter of seconds in the exact position on the building where they are required.

The experiment follows a pilot scheme with 14 house-shells conducted by the B.R.S. at Norwich a year ago; the present programme, however, has been planned to cover not only the work up to roofed-in stage, which is assisted by the crane, but also the work to the interior of the house right up to completion, to ensure that this also can be speeded up to take full advantage of the more rapid construction of the exteriors made possible by the crane.

In addition, a close study is being made of the effect of the crane on site organisation, with particular emphasis on the concentration of labour around the crane, which facilitates supervision and control. Thus the concentrated effort moves bodily along the line of production, completing as it goes, in contrast to dispersing effort over a large area.

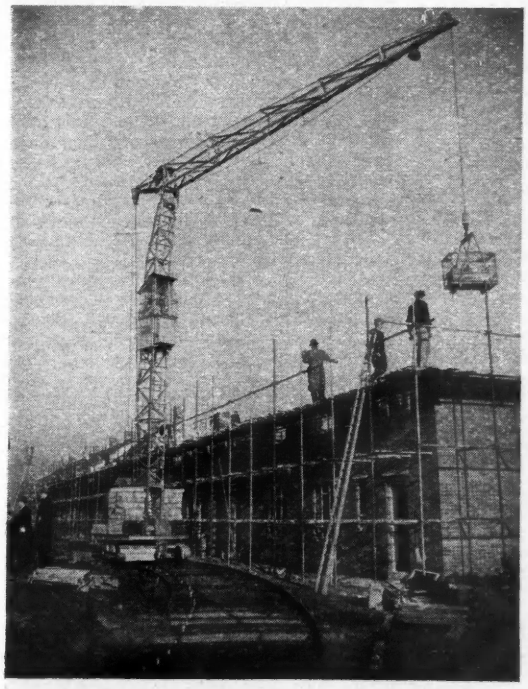
To reap the fullest benefit possible from the use of the crane the co-operation of the building workers was essential, and this happily has been achieved at Norwich, no doubt partly due to the forethought shown by arranging bonusing to allow the men themselves to obtain in higher earnings a part of the benefits of increased production.

The particular crane used in the experiment is a Liebherr tower crane, which is being operated by Messrs. Thos. C. Wild (Machinery), Ltd., of Sheffield

Speaking afterwards at Norwich City Hall, MR. MARPLES said that, in spite of the immense quantities of building work which had to be done, the building industry might easily find itself in a tough spot because its prices were too high. For the next 25 years so much building work needed doing that the industry would never work itself out of a job, but it could easily price itself out of a job.

The tower crane was, he said, an example of how, by using machinery intelligently on suitable sites, we could build many more houses with the same labour force as we now used, while to the operative it meant that each man could produce more output and earn more money. He would like to raise the status, earnings and production of the building trade operative from its present relatively low level to a much higher one. This experiment showed that if a willing man skilfully used efficient machinery as his servant he could almost double his output.

Mr. Marples added that it was hoped to carry out more such experiments in different places, and to extend the use of the crane on a large scale. For the smaller builder, he would like to see cranes of this type hired out by specialist sub-contractors.

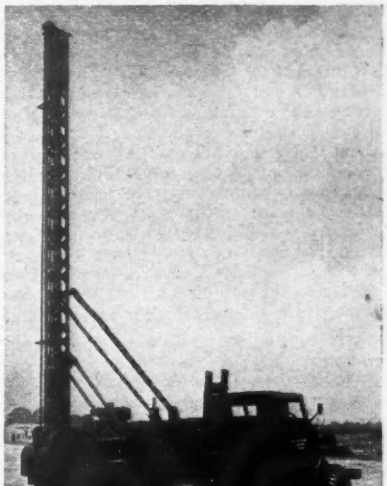


A general view of the tower crane in action on the site.

NEW SOIL-BORING MACHINE

Drilling at a Foot a Minute

A NEW soil-boring machine which can be mounted on a lorry or trailer has been developed at the Road Research Laboratory of the D.S.I.R. The machine is a complete unit, powered by its own engine, and it will drill clean boreholes up to 20 in. in diameter and 16 ft. deep in most soils. The boring bar can be brought from travelling to working position in one minute, and it will bore vertical or inclined holes in a wide range of soils at a rate of about 1 ft. a minute.



The soil-boring machine.

The machine can be used for making test bores when investigating sites for roads and buildings. It can also be used in place of a pile-driver when short piling is needed, in providing house foundations in clay soils, for instance. The machine drills the series of holes required and the piles are then cast by filling the holes with concrete.

Mechanical Details

The machine is a complete unit powered by its own air-cooled, twin-cylinder diesel engine developing 7 B.H.P. at 1,200 r.p.m. The chief feature of the machine is a hollow lattice mast 9 in. square, which can be raised from its sloping travelling position to a vertical position by means of a pair of feed screws controlled by a friction clutch. The main pivot is formed by trunnions mounted on the outside of a gear box attached at the lower end of the mast.

The boring bar is rotated by passing it through a central square hole in a gear wheel controlled by a second clutch. The bar is able to slide through this gear wheel and is steadied at its upper end by a bearing mounted in a raising which is free to slide inside the mast.

The boring bar is attached to an endless chain which passes over a free sprocket at the top and a driving sprocket at the bottom of the mast. The bar is raised by power but may be lowered either by power or by gravity with a hand-brake to control the

feed. Driving shafts, for rotating and lifting, have been arranged co-axially with the main pivots to permit boring with the mast inclined. A reversing gear gives change of direction to all the motions controlled.

The normal speed of rotation of the boring tool is between 50 to 100 r.p.m., and the average lifting velocity is approximately 3 ft. per second.

Three types of boring tools have so far been developed. The first has a circular plate welded to a vertical stem, the plate having two sectors removed and the leading edges bent down to give a slight lead. Separate cutting edges tipped with a hard material are provided for bolting to these leading edges. The sector openings are covered with hinged flaps which only allow the soil to pass upwards through the tool. This tool is satisfactory in most soils but the cut away portions will only allow small stones to pass through. To overcome this difficulty a second tool with a two-start helical form has been made. This tool is very suitable for large, loosely compacted gravels but tends to ride over large stones if they are tightly embedded. A third tool was, therefore, designed to deal with such stones. It is fitted with two spikes about 4 in. long at about ⅔ of the radius out from the centre, and the circular path of these spikes loosens large stones.

RAISING A DAM

Use of Prestressed Concrete Suggested

A METHOD of dam construction which, it is reported, has not been used before in this country is being considered for the proposed raising of Howden Dam, in the Derwent Valley, by 45 ft. The scheme, which would mean the storage of an additional 2,700m. gallons, has been outlined by consultant engineers in a report to the Derwent Valley Water Board.

Among the methods of construction considered is a "cable design," which is a form of prestressed concrete foundation which has been used successfully in Algiers. There are to be consultations with M. Andre Coyne, a leading French civil engineer, who has worked in Algeria.

Laboratory tests of the strata will be made by the Department of Scientific and Industrial Research. The cable method would probably mean a saving of about 25 per cent. in the capital cost, which has been estimated at between £1¼ and £2m.

FORK LIFT APPLIANCE

Adapted for Difficult Sites

THE CAPABILITIES of a fork lift manufactured by Mathew Brothers, Wallington, Surrey, were demonstrated under appropriate site conditions near their works, on December 3, to members of the technical Press. The fork lift, which has a capacity of 3,500 lb. at 18 in. outreach, is mounted on an adapted version of the Fordson Major tractor. The lifting gear consists of a mast with alternative lifting heights of 9 ft. or 12 ft. This has a tilt of 10 degrees back and three degrees forward, and is operated by a balanced vane-type pump and lever-controlled sliding valve unit. The machine, which has a ground clearance of approximately 15 in. and a turning circle of 13 ft. 4 in., is understood to be able to travel at a speed of 20 m.p.h. when loaded, to have a lifting speed of 32 ft. per min., and to be able to travel up a gradient of 1 in 2½ with load.

SAFETY IN THE BUILDING INDUSTRY

INDUSTRIAL SAFETY

Sixth Annual Conference

THE Sixth Annual Conference of the Industrial Safety Officers' Section of the Royal Society for the Prevention of Accidents opened at Beatrice Webb House, near Dorking, Surrey, on October 24. Over 90 members of the section attended, all of them safety officers from industries in all parts of the country.

SIR ROBERT HYDE, Founder of the Industrial Welfare Society, gave the opening address, and was followed with a paper entitled: "The Law and our Liabilities," read by MISS J. STURGEON, of Imperial Chemical Industries, Ltd. The author traced the development of an injured workman's right to claim from his employer at common law side by side with the development of factory legislation to the present day. Speaking of the high damages that were awarded nowadays in common law claims, Miss Sturgeon said that while it might be thought that these damages were excessive and out of proportion to the occupier's fault, that was not the basis on which they were awarded. The damages were assessed on the injuries and the value of those things lost to the injured persons because of those injuries. Doubtless also, due regard was now being paid to the decreasing purchasing power of money. "Cases like these," said Miss Sturgeon, "are most regrettable for all concerned but they do have the advantage, if it can be called such, of reminding occupiers of factories of their obligations."

Causes of Accidents

In a paper given on "The Presentation and Use of Safety Specifications," MR. A. G. PALMER, of the North Thames Gas Board, dealt with methods of providing suitable plant or machinery with the aid of engineering specifications in order that safety both to plant and operator might be ensured. Shortcomings in design were frequently the cause of industrial accidents and one provided as an example by the speaker was staircases. "How often," said Mr. Palmer, "are staircases designed at an angle which makes them neither a ladder nor a staircase, with the result that they are used in the wrong way—with disastrous results.

"Nothing really difficult arises in the preparation of safety specifications providing that essential features are kept in mind. These principles may be summarised as follows:—

(1) In general, the specification must say what is wanted and where, but must not attempt to design the plant or equipment in detail. This is the designer's job and he must be left sufficient latitude to enable him to do it, remembering the need for using such materials as he has or is able to get.

(2) The specification must, however, rule out conditions or materials which are not acceptable.

(3) The specification must, however, take into account any special design features of the organisation concerned.

(4) The specification should be attractive and interesting as well as informative, and yet cheap enough to make frequent issue possible.

(5) The specification must be drafted in conjunction with, and be acceptable to, the design and constructional staff and operators who are concerned with it."

ACCIDENT PREVENTION

London Group to be Formed

IN THE INTERESTS of safety in building operations in the London area, an accident prevention group is shortly to be formed. An inaugural meeting at which it is expected a chairman and other officers will be elected, has been provisionally fixed for January 21.

Details of the proposal to form the group were given to members of the Central Metropolitan Group of the London Industrial Committee by Mr. W. Dawes when they met on December 8. The meeting indicated its approval of the proposed scheme.

Mr. Dawes said that the group would be known as the London Building and Engineering Contractors' Accident Prevention Group. It would be the fifth group to be formed under the London Industrial Co-ordinating Committee. It would be an autonomous body the officials of which would give their services voluntarily. Member firms would be asked to subscribe 30s. a year towards the administrative expenses of the group. Monthly meetings would be held at the Safety, Health and Welfare Museum, Horseferry-road, S.W.1.

Emphasising the need for such a group, Mr. Dawes said that it would provide an opportunity for the discussion of safety problems of special interest to building contractors. The speaker said that the conception of any group was useless unless the executives of a firm from the highest level downwards had a real interest in accident prevention.

PORTABLE MACHINE TOOLS

A Course at the Brixton School

TO MEET the ever-increasing demand for information on the use and possibilities of powered hand tools, the Brixton School of Building is offering a short series of lectures together with demonstrations and opportunities for the actual use of the main powered hand tools that may be used with advantage by the carpenter and joiner. Each tool will be dealt with in a systematic manner to show its full range of work, with particular reference to its care and maintenance.

There will be six weekly meetings commencing on Tuesday, January 20 next, at 6.30 p.m. The fee for the course is 12s. 6d.

The outline of the syllabus is as follows: 1, general introduction; 2, drills and attachments; 3, router, screwdriver, blower; 4, saws: crosscut, ripsaw, fretsaw; 5, planer, orbital sander; 6, bench grinder, hydraulic floor cramp, metal croppers; general summing up.

Applicants should write to the Secretary at the School, Ferndale-road, S.W.4, giving name of firm, position held and qualifications.

R.I.C.S. Junior Organisation

The Junior Organisation of the Royal Institution of Chartered Surveyors held their dinner this year on December 5, at the hall of the Worshipful Company of Drapers, in Throgmorton-street. The dinner was a great success and was attended by a large number of members and their guests. The Lord Mayor of London, Sir Rupert de la Bere, M.P., attended the reception and expressed regret that another engagement prevented his staying for the dinner.

MISTAKE IN BUILDING CONTRACTS

An Assessment of the Legal Position

By GEORGE C. MASON, B.A., Barrister-at-Law

ALTHOUGH great care is usually taken in the drawing of building contracts it will sometimes happen that the contract is found not to express the true intentions of the parties, or the intention of one of them. That is, the contract suffers from mistake. All contracts are liable to this defect but none more so than building contracts because of their length, their complexity, and the considerable amount of detail they must contain.

Now it is well to understand the exact meaning of mistake, and the following points must be noted:

(a) Mistake can only arise, within its technical meaning, when the contract fails to express the true intentions of the parties at the time of making the contract. That is the operative time. No subsequent intentions of the parties are of the slightest importance.

(b) With very slight reservation, it may be observed that the only time the court will grant relief to the aggrieved party or parties is where there is mistake of fact. Mistake of law is not a ground for relief.

(c) We are only concerned here with written contracts. The court clearly cannot rectify a verbal contract.

Mistake can arise in many ways and it is not proposed to consider them all here. There can, for example, be mistake as to the identity of the contracting parties, but this is not the type of difficulty likely to be encountered in the ordinary building contract. The most usual type of mistake will be mistake as to the subject matter of the contract. This type of mistake will, itself, be of two kinds:

(a) Where both parties are in error as to the subject matter of the contract so that it fails to express the true intention of both of them.

(b) Where one party is in error as to the subject matter of the contract, so that it fails to express the true intention of that party, while the other party is under no such error.

Rule of Equity

With regard to the first case it is a rule of equity that where a mistake is common to both parties so that it defeats the true intentions of both of them the court will rectify the contract so as to give effect to the true intentions of the parties. The onus of proving the true intention of the parties lies upon that party who is seeking relief and he must be able to produce clear and undoubted evidence as to what was actually agreed upon. The indicated rule has been endorsed by the court on many occasions and the following cases are in point:

Neil v. Midland Railway Company (1869) 17 *Weekly Reporter* 1871. Neil agreed to execute certain works for the railway company and the contract provided that he was to be paid a gross sum. The contract contained a schedule showing how the sum was arrived at. By an error, 5,086 yards of concrete were shown as £55 19s. 2d. and not £1,271 10s. The court held that Neil was entitled to rectification.

National Provincial Bank re Boulter (1876) 4 *Ch D* 241. The bank agreed to make further advances to a customer upon his giving further security. The customer pointed out three houses of his to the manager, and an instrument of charge dated November 2, 1875, was duly completed, and from a description supplied by the customer, the three houses were described as being held under a lease dated September 25, 1874. The instrument, further, recited that the charge in favour of the bank was subject to a prior mortgage in favour of a building society dated October 3, 1874. In fact, only one of the three houses was held under the lease of September 25, 1874. The other two houses were held under lease dated December 31, 1873. The customer subsequently got into difficulties, but there would have been enough to pay the bank if the two houses were within charge. It was held that the bank were entitled to rectification so as to bring the two houses under charge.

Unilateral Mistake

In the second indicated circumstances, that is where the contract only defeats the intention of one party, while the other party is under no error, the appropriate relief is recision or cancellation. Rectification will not be granted unless in the case of fraud or unfair dealing.

These principles are shown in the case of *Blay v. Pollard and Morris* (1930), *I.K.B.* 628. Pollard and Morris, the defendants, had been in partnership as garage owners. They agreed on March 4, 1929, to dissolve partnership and Morris was to take over all liabilities of the business from that date. By a written agreement, drawn by a solicitor, Pollard's father, and dated April 20, Morris undertook to indemnify Pollard against all arrears of rent. Morris signed the agreement although he said, at the time of signing, that he did not understand its terms. When they were both sued for the rent Pollard claimed to be indemnified by Morris. Morris pleaded that he had signed the agreement in the belief that he was only accepting liability for all moneys due from the dissolution and that the agreement was drawn up under mistake.

Morris made no allegation of fraud and failed to claim rectification. The Court held (1) it was not open to Morris to raise the defence of *non est factum* and to say that the document did not contain what he agreed to; (2) that in the absence of application to amend and in the absence of allegation of fraud the court could not rectify; and (3) there was no evidence of mutual mistake, so that the court could not rectify.

Exceptions to Rule

The statement that the remedy in the case of unilateral mistake, and in the absence of fraud, is cancellation or rectification is subject to some qualification. There are cases which go to show that, in unilateral mistake there is, or maybe, a third remedy —cancellation with the alternative of the defendant submitting to rectification.

These cases must now be considered:

Garrard v. Frankel (1862) 30 *Beav* 445. Frankel agreed to take a lease of a house from Garrard at £230 per year. In the actual lease the rent was stated as £130 per year. It was held that the lessee must have seen an error but that he ought to have the alternative of taking the rectified lease or rejecting it.

Harris v. Pepperell 1867 *L.R.5 Eq.I.* The vendor executed a conveyance which included a piece of land not intended by him to be sold. It was held that defendant had the alternative of rejecting the whole contract or of taking it as plaintiff intended.

Paget v. Marshall (1884) 28 *Ch D* 225. The plaintiff wrote defendant a letter expressing agreement to make him a lease of a portion of a block of three houses consisting of the first, second, third and fourth floors of all three houses at £500 per year. Defendant accepted the offer, in writing, and a lease was duly executed. The plaintiff claimed that he intended to retain the first floor of one of the houses. The defendant denied that he accepted such offer or that he executed the lease in any error. It was held that there was not evidence of a common mistake but that there was evidence of mistake on the part of plaintiff; accordingly, the plaintiff was given judgment for recision with an option to the defendant to submit to rectification.

These three cases are of importance and have been mentioned somewhat fully because, with one further case, they constitute a group of their own. They are the only reported cases of unilateral mistake in which the alternative of submission to rectification has been given, and it may be that modern ideas are moving away from such alternative and tend to cancellation only.

The Modern Tendency

An indication of this tendency was given by *Farwell J. in May v. Platt* (1900) 21 *Ch* 616-623, where he suggested that the rule in the cases quoted could only be supported if there was evidence of fraud. Farwell J. observed: "I have always understood the law to be that in order to obtain rectification there must be a mistake common to both parties, and if the mistake is only unilateral there must be fraud or misrepresentation amounting to fraud." (Blay v. Pollard supra). Nevertheless, Garrard v. Frankel supra, Harris v. Pepperell supra, Paget v. Marshall supra, have not been overruled and must not be disregarded. Consequently, our statement must be amended by saying that in the case of unilateral mistake the court will not grant rectification, but will order cancellation or cancellation with the alternative of submitting to rectification.

Contracts with Local Authorities

A further group of cases must now be considered and these are of extreme importance to building contractors. The net effect of these cases is that where there is an error in a contract, even a mutual error, with an urban authority (or any local authority contracting under its seal) the court has no power to order rectification. The greatest care should, therefore, be taken in the preparation of all contracts with local authorities because it is highly unlikely that any remedy exists, no matter at what loss the builder may be. Local authorities, by reason of their statutory obligations, are never in a position to make concessions from their strict legal rights.

The reason why these contracts can never be rectified springs from the conception that rectification can only be granted when there is an error in reducing an antecedent concluded contract to writing. In other words, there must be a concluded contract, verbal

or otherwise, which expresses the true intention of the parties and a subsequent failure to express this intention in the instrument in issue.

The principle is that while courts of equity do not rectify contracts, they may, and do, rectify instruments purporting to be made in pursuance of contracts. (Mackenzie v. Coulson 1869 LR 8 Eq 368.) This rule might be described as the rule in *Higgins Ltd. v. Northampton Corporation* (1927) 1 *Ch* 128 (affirming Faraday v. Tamworth Union 1916 86 L J Ch 436).

In this case a builder, Higgins, contracted with the corporation for the erection of houses. He later assigned the contract to a firm known as Higgins, Ltd. The contract was sealed by the corporation in accordance with Section 174 Sub-section 1 of the Public Health Act 1875 (since repealed by Section 307 and 11th Schedule Part I of the Local Government Act 1933, but such contracts must still be sealed). The building firm sought rectification of the contract on the grounds that when the builder entered into the same he was under serious mistake.

Romer J. quoting Younger J. in *Faraday v. Tamworth Union* (supra): "The plaintiff asks for recision. Now, it appears to me that even if there had been a mutual mistake on the part of himself and the defendants, the difficulties in a case like this (i.e., Faraday v. Tamworth Union) are very great, if not insuperable. Admittedly, such an agreement as this is only binding on the defendants if it be under their seal. But the defendants have attached their seal to no agreement in a form other than that which they have executed, and to rectify that agreement, as executed, and then to make it binding upon them in terms other than those which they have sealed, appears to me, as at present advised, to have the effect of binding them to an agreement which requires to be under seal for its validity, but which they have never sealed."

Romer J. gave judgment as follows: "The contract expressed the intention of the defendant corporation and that having regard to the provisions of S.174 of the Public Health Act 1875 there was no contract at all between the parties, and that the court had no jurisdiction to grant the relief sought."

It follows that even if the parties had been under a mistake, the contract could not have been rectified. In spite of the clear and absolutely unambiguous judgments of Romer and Younger J.J. in the cases quoted, there may still be some ray of hope for the builder who finds that he has entered into such a contract under mistake. The observations of *Clauson J. in Shipley v. Manchester Corporation* 1935 *L.T.* 475 are in point.

In the course of the judgment Clauson J. observed that the dictum in Mackenzie v. Coulson (supra) that rectification can only be ordered if there was an antecedent concluded contract, did not justify the view that the court cannot grant relief, even in the case of a clear mutual mistake, in the instrument, in its attempt to set out the concurrent intentions of the parties, at the time of its execution, where a previous contract could not be proved.

It must be observed that the issue in this case was the construction of the actual instrument, so that the observations of Clauson J. remain merely *obiter* and have not the force of law. They may, however, indicate a future change of attitude.

It is somewhat remarkable that neither judges in Higgins Ltd. v. Northampton Corporation or Faraday v. Tamworth Union appear to have adverted to the Irish case of *Collen v. Dublin County Council* (1908) I.R. 503. The facts in this case were as follows:

Plaintiffs tendered for certain building works. Defendant council found the price too high and modified its quantities. In the subsequent bills the price was stated too low and plaintiffs tendered at a lump sum. Their tender was accepted, and the work was completed. Rectification was granted.

Now, the same type of issue concerning sealing existed here as in Higgins v. Northampton Corporation and Faraday v. Tamworth Union, but it was not a bar to success. However, the weight of authority is distinctly on the side of these two cases. However facile it may appear to be to say so, it would be a great deal better not to have mistakes in the contract than to have to go into court with no further authorities than Collen v. Dublin County Council and the observations of Clauson J. in Shipley v. Manchester Corporation.

Mistake in Builder's Favour

Now, the question will naturally arise, suppose the mistake, although mutual, is in favour of the builder, and it is the local authority who are seeking rectification, can the builder take advantage of it? The answer seems to be that he is in just as favourable a position as the local authority would be if matters were the other way. It is hard to see what other answer there can be. The whole basis of rectification is that there exists an anterior concluded contract which is not correctly set out in the instrument purporting to express it and, we have seen, such an anterior contract cannot exist where one party can only execute the instrument under its seal.

Contracts With Companies

The final question arises concerning contracts with companies. It is well known that the officers of a company can make contracts which are in the ordinary course of business of the company. It may well be in the competence of these officers to contract for minor repairs, but this might not apply to extensive building operations which would have to be contracted for under the seal of the company. If this is so it is very hard to see why the rule in Higgins Limited v. Northampton Corporation does not apply. Of course, whether a company must contract on its seal, or need not, is a question of fact, depending on the appropriate circumstances, and on the constitution of the company. Nevertheless, there is room for particular caution in dealing with a company because there may be difficulty in obtaining subsequent rectification, for the reasons indicated.

BOREHAM WOOD DISPUTE

THE situation at the council's new housing estate at Boreham Wood was discussed at a meeting of the London County Council on December 2. MR. A. REGINALD STAMP, chairman of the housing committee, said that unless there was an unconditional return to work on the part of the men working on the site, it would be necessary for steps to be taken to close down the site.

MR. NORRIS KENYON, leader of the Opposition, said that the action taken by the council in this matter had the full support of members on his side of the council. It was clear that responsibility for the dispute lay with a very few individuals, headed by Mr. Mildwater. Mr Kenyon continued: "We are still sure on this side of the council that with an informed public opinion behind us there is no doubt whatever as to the outcome of this dispute, and I would like to express my own and my friends' appreciation, not only of the way in which this council has behaved over this matter during the last 24 hours, but in the perfectly proper way in which the union has behaved, and that anything that I and my colleagues on this side of the council can do to strengthen the hand of the union, to strengthen the hand of the many hundreds of decent men on this job who are desirous of helping the council in its housing drive, and to strengthen the hands of the leader of the council, the chairman of the housing committee and the chairman of the general purposes committee, we will most willingly do."

MR. I. J. HAYWARD, leader of the council, said:

"When we accepted the undertaking of the union recently, in connection with the dispute, we accepted it in all good faith. and I am so glad that Mr. Kenyon did express this afternoon in his words sentiments of confidence in the union and their co-operation with the council. We have not the slightest quarrel with them as organisations. We believe that they have done their best when, undoubtedly, there was an atmosphere around the whole of the circumstances of this site which prevented any undertakings that were given from being carried out as all would wish them to be. and, consequently, it is a difficulty that both the council and the unions have had to grapple with in this latest circumstance.

"I would like to take this opportunity of saying, as I have said many times on the public platform, that in the great housing drive which this council has had to engage in since the war, we have admired both the co-operation of the industry and the co-operation of the contractors in this great area. There is not the slightest doubt that there has been a willingness and a very strong desire on the part of all of them to do their very best in the interests of the people of London, who are so badly needing housing, and it is for that reason indeed that we deplore so much the difficulties, the recurrent difficulties, the persistent difficulties that have been operating on this site, and there is not the slightest doubt about it that, while we place no blame on either the contractors or the unions for their desire and earnestness in trying to make this site go smoothly, there have been circumstances there which we are bound now to grapple with, and I do hope that the action which the council has taken will result in no more difficulties on the site.

"We have made up our minds," Mr. Hayward concluded, "that we are going to have no more of this business, and we will not in any circumstances allow Mr. Mildwater to return to this site."

∴ As reported in our last issue, a decision to return to work was taken by the men on the site on the same day that the matter was discussed by the L.C.C.—ED.

LAW REPORTS

Scaffolding Firm Win Appeal Against Employee

COURT OF APPEAL.
BEFORE LORDS JUSTICES SOMERVELL, JENKINS AND HODSON.

Sexton v. Scaffolding (Great Britain), Ltd.

THE Court of Appeal, on November 26, allowed an appeal by Scaffolding (Great Britain), Ltd., of Willow-lane, Mitcham, against Mr. Justice Donovan's judgment in the Queen's Bench Division awarding £1,419 damages to one of their employees, Mr. Terence Sexton, of Chepstow-road, Paddington. He was injured by falling 20 feet from a ledge above a shop at Barnes when he was helping to take down scaffolding.

The judge had held that a guard rail was removed before it should have been, and that there was a breach of the building regulations. He also found that there was contributory negligence by Mr. Sexton in walking on a coping stone outside the scaffolding, and that he was one-third to blame for the accident. Mr. Stephen Chapman, for the company, contended that the regulations should be restricted to the building workmen who used the scaffolding.

Lord Justice Somervell, giving judgment, said that Mr. Chapman submitted that the regulations did not apply to scaffolders' employees at all, but were for the protection of men engaged on building, as distinct from scaffolding. "I do not accept that submission, and I see nothing in the regulations to support it," said his lordship. "It is clear that some of the regulations are not applicable to the erection and dismantling of scaffolding, but I can see no reason for saying that some of them were not intended for the protection of scaffolders' men as much as builders' men.

"I have come to the conclusion that regulation No. 24, which provides that there must be a guard rail, does not apply to the taking down of scaffolding. I think the operation has to be regarded as a single one, of which the removal of the guard rail is an essential part which has to be done at some time."

As there was no breach of statutory duty, and Mr. Sexton had not established negligence, the appeal must be allowed.

Lord Justice Jenkins, who agreed, said that it was unnecessary to do more than consider whether regulation No. 24 applied to this particular operation of dismantling scaffolding. It was not necessary to decide, and he was not prepared to hold, that none of the regulations were applicable to scaffold workers. He thought that dismantling was to be regarded as an operation of a special character.

Lord Justice Hodson, who agreed that regulation 24 did not apply, said that he thought it related to scaffolding which was in use.

House-owner Claims Road Costs from a Builder

QUEEN'S BENCH DIVISION.
BEFORE MR. JUSTICE STREATFEILD.

Reginald Smith v. Robert Jones

IN the Queen's Bench Division on November 5, Mr. Justice Streatfeild dismissed, with costs, an action in which a householder, who had bought at a controlled price a house built under licence, claimed from the builder the cost of making up the road when it was taken over by the local authority.

Mr. Reginald Smith, owner of 255, Westwick-road, Sheffield, sued Mr. Robert Jones, builder, of Greenfield-road, Sheffield, claiming an indemnity in respect of £49 3s. 4d. which he had to pay Sheffield City Council.

Mr. Charles Lawson appeared for plaintiff and Sir Lynn Ungoed-Thomas, Q.C., and Mr. F. Bowen Alcock represented the defendant.

Mr. Lawson said that the amount involved was small but the case was in fact a test action. Mr. Smith's house was one of 28 in respect of which building licences were issued in 1946 by Sheffield City Council, and the controlled price was £1,065. In 1950 the council made up Westwick-road, and Mr. Smith was called on to pay the sum claimed as his share of the cost.

Counsel submitted that the controlled price included the cost of road charges. Although the licence did not specifically refer to road charges, it referred to the licence application form. On this it was stated that the fixed selling price included "cost of roads, sewers and other services." The two documents should therefore be read together in constructing the meaning of the licence.

Mr. Lawson argued that the controlled price must include provision for the cost of roads.

Sir Lynn Ungoed-Thomas contended that there was no condition that the maximum selling price included the road costs. The court was not entitled to look beyond the terms of the licence. A local authority might not call upon a householder to make up a road for many years, and it would be quite impossible to assess the charges when fixing the selling price. The reference to roads in the building application would apply only to existing roads and not to future dedication charges.

Giving judgment, Mr. Justice Streatfeild said that the words "according to the application dated November 23, 1945," in the licence were mere matters of description, and did not authorise the Court to look at the words of the application in interpreting those of the licence. Even if he were wrong on that point, he thought the reference to roads in the application was in respect of roads, sewers and other services carried out by the builder himself. It did not contemplate dedication charges which might, or might not, be made some years afterwards.

Judgment was accordingly given for the defendant, with costs.

Building Contractor's Director Fined £500 for Unlicensed Work

CENTRAL CRIMINAL COURT.
BEFORE THE COMMON SERJEANT.

Regina v. Holloway Brothers (London), Ltd., and E. C. Holloway

UNLICENSED work done to the house of a woman friend by a director of Holloway Brothers resulted in a fine of £500 on him at the Old Bailey on December 8.

The director, Ernest Charles Holloway, 73, living at Heather Grange, The Drive, Belmont, Surrey, and Holloway Brothers (London), Ltd., pleaded guilty to a charge of unlawfully carrying out work at 63, Cadogan-square, London, at a cost of £14,519 in respect of which no licence was in force.

The Common Serjeant (Judge H. L. Beazley) gave the company a conditional discharge and told Holloway that in default of payment he would go to prison for six months.

The Common Serjeant said this was a most unusual case. A company of the highest reputation, and one who had been a respected director, found themselves in the dock for what undoubtedly was a most serious infringement of the regulations.

He continued: "I am satisfied that the company took, as one would expect, every reasonable precaution to see that this sort of thing should not occur, but I am afraid I must say it was entirely the fault of Mr. Ernest Charles Holloway that this wretched business has culminated as it has. It was not until February this year that anything was known by the board of what was going on."

Mr. Mervyn Griffith Jones, prosecuting, said that Ernest Holloway, a man of the highest character, was one of four managing directors of the firm, and he had been on the board since 1912. In 1949, a woman named Mrs. Barrett bought a house in Cadogan-square. She wanted to convert it into flats, one of which she intended to live in herself. She was apparently an old friend of Ernest Holloway and she approached him with a view to his carrying out the necessary reconversion work. Between October, 1949, and August, 1950, he obtained five different licences in respect of this.

By February of this year £21,913 worth of work had been done, amounting to an excess of £14,519, not covered by licence.

When Mr. Peter Holloway, the chairman of the company, heard of this he ordered the work to stop. The company notified the Director of Public Prosecutions that the offences had been committed. There was a special board meeting and Ernest Holloway resigned his directorship.

At the beginning of April he and the chairman of the company sent signed statements to the board. In his statement to the police, Ernest Holloway said his salary as managing director was originally £1,000 a year, but during the last three years it had been at the rate of £2,000 a year. In addition he held certain shares in the company.

He realised that the amount spent on work at Cadogan-square was in excess of the licences granted, but it was very difficult for him to stop the work because Mrs. Barrett was living on the premises and in a poor state of health. The work went far beyond what was contemplated. He had always carried on the high tradition of his family with integrity and it had been a profound shock to him and an indescribable worry that he should have committed a breach of the law.

Mr. F. H. Lawton, on behalf of the company, said that since the board of directors became aware of this breach of the regulations it was decided to bring the matter to the notice of the Director of Public Prosecutions. They took this action for two reasons—to safeguard their great reputation and to safeguard themselves against the chance of some disgruntled workman or disgruntled neighbour writing a letter to the authorities at some future time.

PLASTERING CONTRACTORS

Presidential Nominations

AT THE THIRD annual general meeting of the National Federation of Plastering Contractors, held at Oddenino's Hotel, London, on December 3, the following were elected to office for the ensuing year: President, Mr. J. L. Phillips (Leeds); senior vice-president, Mr. R. A. Atkin (Cardiff); junior vice-president, Mr. J. S. Cook (Cambridge); immediate past-president, Mr. H. Humber (London).

THE TOWN DEVELOPMENT ACT

Ministry Memorandum

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, has sent local authorities in England and Wales a memorandum on the Town Development Act, 1952. The Act, which became law during the last session of Parliament, increases the powers held by local authorities for tackling their housing problems. The particular object of this Act is to relieve congestion in the overcrowded cities by furthering the expansion of smaller towns suitably placed to take people from the cities. Where the city cannot find enough land in or near its own borders to solve its housing problems the new Act will facilitate the acquisition and development of sites further afield.

The memorandum is intended to help local authorities to decide what use they can make of the Act and to suggest the kind of points they should keep in mind in doing so. The Minister hopes, as the memorandum makes clear, that authorities will be able to reach agreement by negotiations between themselves; Ministry officials will help in informal discussions to settle any points of difficulty. The Board of Trade will co-operate with the Minister in advising the local authorities about industry for expanding towns. New industry will be necessary in most instances to provide people with work near their homes. It is expected this will come mainly from the congested areas.

Under the Act the big city which is exporting some of its population can contribute to the costs of the smaller town which is to receive them. In particular, it can pay the rate contribution on the new houses during the earlier years of expansion before the receiving authority is strong enough to carry the burden. The Exchequer can also contribute in certain circumstances, for instance on water supply and sewerage works.

"As much general guidance as possible has been given in the memorandum" says the Ministry in a covering circular, "but the Minister recognises that the action which can be taken under the Act will vary a great deal according to the circumstances of individual areas."

(Copies of the "Memorandum on the Town Development Act" can be obtained from H.M. Stationery Office, price 6d.)

Absorbing the Overspill

AN explanation of the chief provisions of the Town Development Act, 1952, was given at the Housing Centre on November 18 by MR. W. A. WOOD, of the Ministry of Housing and Local Government.

Mr. Wood pointed out that the Town Development Act had nothing to do with the development charge under the 1947 Town and Country Act, which had been the subject of a White Paper issued that day. It was rather a small piece of machinery which could be fitted into the appropriate place in the 1947 Act or whatever was going to take the place of that Act. The main impetus for the Town Development Act came from within the Ministry itself. It dealt with a problem which very much concerned London, but it was not exclusively a London problem and there was a lot of work being done and going to be done in other parts of the country. It was the London problem, however, which first started people thinking about the need for such an Act.

The conception behind the Act, said Mr. Wood, was that the New Towns could not do the whole job of taking the overspill from London and other big cities or "conurbations," and the "expanded towns" (as they were termed in the Act) would take what was left.

People had suggested that the first thing to be done was to concentrate on the redevelopment inside the big cities as far as possible before going outside and developing new communities, said Mr. Wood. He thought it was fair to say that that would be done, but in redeveloping many of these obsolete areas, whatever redevelopment you did, however much you pushed up the densities, you could not give people reasonable living conditions without producing some overspill from the big cities. Therefore the new Act was a necessary part of the picture.

There were three principal objects of the Act, the speaker explained. One was to enable the "exporting authorities," those which have the overspill, to contribute money to the "receiving authorities" (those which would accommodate the overspill) for the new development. The second aim was to enable the Exchequer to contribute to the cost of the new development, and the third was to enlarge the powers of local authorities to enable the receiving authorities to do the work which was necessary and to allow the exporting authorities to join in and give them the benefit of their experience of large-scale building (the exporting authorities were usually big authorities like the L.C.C., while in many cases the receiving authorities were small urban or rural authorities which had not previously had to undertake such work on a large scale).

A great deal of work had already been done under the Act, especially in regard to London, and a number of towns and districts outside the Green Belt but near London had been designated as receiving areas. There were other places in the provinces where similar preliminary work had been done, notably in Lancashire and Cheshire. The Lancashire County Council had already selected a number of places to take the surplus population from Manchester and Salford, and the Cheshire County Council was doing something to take people from the same two cities. Parts of these two counties would also provide eventually for the overspill from Merseyside.

When the preliminary work had been done it was the job of the receiving authority to get ahead with plans as fast as it could. A good many of these proposals had already been embodied in the appropriate county development plan. This would be a great help in advancing the execution of the scheme. People would also have the opportunity of seeing what was proposed and expressing their objections to it if they had them.

In other cases there would be proposals for new districts and new towns to be developed. It might be that the receiving districts would come forward with their proposals; it might be that the exporting authorities would be looking outside their boundaries for places in which to expand.

The Minister had announced that he wanted as much co-operation between local authorities as possible in this matter.

Where the Act differed from the New Towns Act was that it laid emphasis on the receiving authorities doing the development. It was also hoped that the existing local government machinery would be able to carry out the job, with assistance from outside. The second stage in the development was to go to the exporting authorities and see what financial help they would provide. The county councils would also be approached for financial help, for they had the power to give it and were also able to draw up development plans.

After that, the next stage was for all the authorities concerned in a scheme to go to the Minister and see what was left for the Exchequer to carry in order to get the work started.

Mr. Wood said that the Act also provided for compulsion to be applied to the receiving authority if that authority was unwilling to do the work of development itself.

There were two ways in which an outside authority could come into the scheme: (1) as agents for the receiving authority, and (2) as principals. In the first case the local authority would own the land, pay all the bills, be the owners of and responsible for the management of the houses and other works and structures. They would be able to use the building organisation of the exporting authority.

In the second case the exporting authority would acquire the land, own the houses and other works, but it was not intended that they should be a sort of cuckoo-in-the-nest, owning big estates in the area of another authority. There were provisions in the Act for the development works to be handed over to the local authority so that in time these new areas would be part of the existing towns. In the last resort the Minister could step in and order the handing over of the new estate to the existing town and could fix the terms on which the transfer was to take place.

PLACING CONTRACTS

Nottingham to Require Builders to Sign Declaration

AT THE MEETING of the Nottingham City Council on December 1, a question was raised concerning the attitude of the London Builders' Conference to contracts. The Town Clerk, MR. T. J. OWEN, stated that it had been decided that, in the future, builders who put in any tender for Corporation work should be asked to sign a declaration that they would not communicate the amount of a tender to any person or body before the tender was submitted; that they should not adjust their tenders in relation to any other tender to the detriment of the Corporation; that they would not enter into any scheme with other builders whereby any other builder would be compensated for not getting the tender.

The Town Clerk added that he could not say, if a London contractor was involved, whether or not he would sign the declaration. Equally, he could not say if a local builder would do so. Answering a question, he said that a difficulty might arise if a builder refused to sign the undertaking, for it might be the lowest tender, and it was the Government practice to accept the lowest tender.

Latest Employment Situation

Employment in the building and contracting industry decreased by 10,000 during October, according to the latest figures published by the Ministry of Labour and National Service. The total number employed in the industry at the end of October was 1,436,000.

FLOOR FINISHES

New L.M.B.A. Technical Bulletin

"FLOOR FINISHES" is the title of the second of a series of bulletins to be issued by the L.M.B.A. Technical Information Service, which aim at providing answers to problems arising in everyday building practice. The advice given has arisen, it is pointed out, as the result of inquiries on specific problems, and the answers accordingly relate to particular circumstances that have been raised with the L.M.B.A.'s Technical Information Officer, and therefore will not necessarily apply to all other cases. The text of the bulletin is as follows:—

Of all the elements of a building, floors are the ones subjected to the most wear. Abrasion is the main cause of deterioration in domestic floors, and in commercial and industrial buildings the severity of this factor is greatly increased. At times it becomes attrition rather than normal abrasion, as when a floor has to withstand heavy loads or the traffic of trucks with iron-shod wheels. In addition to this increased wear, an industrial floor finish may be subjected to impact loads, to wide variations in temperature, and in premises where acid, alkaline or organic liquid processes are used, to chemical attack as well as physical wear.

It is not surprising, therefore, that the majority of the flooring inquiries that have been received have been concerned with the finishes of floors in industrial buildings. In most of these cases, some of which are being summarised in this bulletin, the floors are of the solid type, generally of concrete; the older wooden floor seems rarely to be encountered nowadays.

Granolithic Concrete Flooring

For heavy industrial use the usual floor finish is granolithic concrete. Because of the hardness of the crushed rock aggregate, it wears well under heavy traffic and withstands considerable impact loads.

The laying of a good quality granolithic floor is an operation requiring considerable skill. A badly laid floor of this type is liable to come away from the sub-floor and to crack and crumble with consequent pitting and dusting. The materials and techniques recommended to obtain a good granolithic floor finish are set out in the Building Research Station Digest No. 24, and the laying of this type of finish is best entrusted to those prepared to follow these recommendations.

It is unfortunate that there have been frequent instances of failure of granolithic finishes and this may account for the many requests for information at an early stage before the work is put in hand.

In one such case it had been decided to replace a boarded floor nailed to timber fillets embedded in breeze concrete, and the inquirer wished to know whether a granolithic topping could be laid directly on the breeze concrete after the timber had been removed. The reply emphasised the necessity of having a base of good, solid concrete for granolithic topping. Unless the breeze concrete was of unusually high quality and contained sand, it would not withstand the drying shrinkage of a new granolithic topping. If the breeze concrete was no more than the usual weak infilling material it should be hacked off down to the dense concrete beneath. This meant that the new work would be 3 in. or 4 in. thick and the most satisfactory treatment would be to lay the base and the topping integrally. With this method the base concrete should be composed of concrete not leaner than one part cement, two parts sand and four parts aggregate graded to a maximum size of ¾ in. and as soon as this has stiffened sufficiently to permit working on it, within about an hour, a ¼ in. thickness of granolithic should be laid so that the base and topping would be married together.

Another inquirer had been invited to discuss the reinstatement in a sweet factory of a concrete floor finish that had become damaged by sugar solution and pot-holed and cut up by truck wheels. He was seeking information before meeting his prospective client on types of finish that would be suitable for the job. The inquirer was advised that any type of concrete flooring would be adversely affected by spillage of sugar solutions and that abrasion and impact from trucking would accelerate deterioration of the finish. The severity of conditions would, of course, determine the rate of deterioration and in deciding the most suitable finish to use it would be necessary to balance the factors involved. Clay tiles would provide the cleanest looking and probably the most satisfactory floor in all ways for this job. If it was decided to put down a granolithic concrete finish the use of high alumina cement instead of normal Portland cement would produce a more resistant finish. In carrying out the work the floor should be well washed, to remove any sugar, and then be thoroughly hacked to provide a key for the granolithic finish, which should be from 1½ to 3 in. thick, depending on the key afforded by the sub-floor. A suitable mix would be one part by volume of high alumina cement, one part of clean sand and two parts of cubical, unweathered granite aggregate. The granite aggregate should be cube-shaped because rounded chippings increase the slipperiness of the surface as it wears, and flake-shaped chippings make a weaker concrete. Granite chippings are often supplied with a content of up to 20 per cent. of "fines" and dust, and this must be removed by sieving before the material is used. The sand in the mix replaces the fines thus removed. The old work must be brushed with a cement slurry of a consistency of thick cream before laying the finish, remembering that a dry slurry decreases the adhesion between the topping and the old concrete, instead of increasing it. The work should be carried out in alternate bays of no greater area than 12 ft. by 12 ft., and the granolithic cured by being kept damp for seven days after laying by a covering of wet sand or sawdust and, during this period, it should not be exposed to traffic.

Defects in Granolithic Concrete Flooring

Because of its hardness, granolithic concrete is apt to wear smooth and become slippery. It is usual to overcome this tendency by incorporating a proprietary abrasive aggregate or carborundum grains in the surface of the finish, and an inquirer wished to know the amount of carborundum that should be used. He was advised to apply 3 lb. of carborundum grains per square yard of surface by sprinkling them evenly over the surface when the final trowelling was carried out, and whilst the grains should be set firmly in the finish care should be taken not to bury them below the surface.

Like all other types of floor finish, granolithic is at times afflicted with "dusting" or powdering of the surface. This defect is due to a variety of causes, but generally to a mix that is too wet, which causes the laitance to come to the surface when the work is finally trowelled. Finishing the work before the mix has "gone off" sufficiently, over-trowelling and such practices as sprinkling the surface of the finish with neat cement to absorb the laitance are other predisposing causes of softness and powdering of the surface. Several inquiries for a remedy for "dusting up" of granolithic finishes have been received and the application of silicate of soda has been advised, with a warning that, for friable floors, the improvement would be only temporary. A mix of one part of the chemical to four parts of water should be applied with a mop or soft broom and be allowed to dry for 24 hours. The surface should then be washed and another application of the mixture be made, which may, with advantage, be a stronger solution of one to three, or even one to two, if the floor surface is very porous. After this second application has dried the floor should again be washed. Other chemicals, such as magnesium silico-fluoride or zinc silico-fluoride may be used, and there are a number of proprietary materials which have been employed with success; with some, it is not necessary to wash the surface after each application.

The risk of serious consequences resulting from defects in floor finishes is illustrated by an inquiry concerning a granolithic floor finish in a milk-processing factory. The finish, laid on a suspended reinforced concrete floor in a multi-storey building, had an integral coved skirting and wide cracks had developed at the junction of cove and floor.

The floor was continuously subjected to wet conditions and water entering the cracks was penetrating the structural floor beneath the granolithic finish and dripping on to the floor below. The damp conditions in the structural floor with the possibility of corrosion of the steel reinforcement obviously required remedying, and for the repair it was advised that the existing finish should be cut out on the line of the cracks to a minimum depth of at least 2 in. with square or slightly undercut edges. The patching compound could then be made with a cement-rubber latex mix which would adhere very firmly to the surrounding concrete and seal the surface.

Stabilised latex is normally supplied in sealed containers and the advice of manufacturers of the particular latex emulsion to be used should be complied with as regards correct proportion of materials.

Granolithic concrete is not, however, suitable for every purpose. Like all types of concrete, it is not very resistant to chemical attack. In a number of inquiries for floor finishes for special industrial uses it was stated that granolithic concrete had been tried and found unsuitable. For example, a recommendation was requested for a finish suitable to renew a granolithic floor in a factory where glucose was processed. At times there was considerable spillage of hot sugar solutions from the processing plant and, although the floors were washed regularly, gradual deterioration had taken place since they were laid about six years ago, and it was now proposed to resurface the floors.

Whilst it is the practice in some industries to use, for instance, concrete flooring where deterioration is certain to occur and to accept the need for frequent repair as inevitable, such a course was quite unacceptable in this case and a durable clean floor was regarded as essential.

Vitreous clay tiles would provide the most satisfactory floor in this situation. If, however, granolithic was used it should, for two reasons, be in the form of slabs or tiles: the quality of the concrete is likely to be better in factory-made slabs or tiles than in *in situ* work, and portions of the floor can be renewed when affected without replacing the whole of the flooring. In such situations, all types of floor tiles should be jointed in acid-resisting cement.

Magnesium Oxychloride Floors

Magnesite compositions can provide a first-rate flooring, but it is essential that the proper ingredients be mixed in correct proportions and skilled layers employed. In the past, attempts to cheapen the cost have sometimes resulted in stinting the magnesite contents and this impairs the wear resistance. Another cause of failure is too wet a mix, due to an excess of magnesium chloride, which is likely to result in severe sweating.

One inquirer sought a remedy for a magnesium oxychloride floor that was "dusting up" and he was recommended to apply, sparingly, boiled linseed oil to which a little drier had been added and to repeat the application when necessary. There are a number of proprietary preparations that have given satisfactory results, and one of these could be used with a good expectation of success.

Another inquiry showed the hygroscopic nature of magnesium oxychloride, that is, its tendency to absorb moisture from the air. A builder requested a remedy for dampness that was appearing on a floor of this material. He was informed that the trouble was probably due to its hygroscopic nature that sometimes results from an excess of magnesium chloride in the mix or the presence of calcium compounds as impurities in the magnesite. He was advised that washing with water only, followed by a dressing of linseed oil thinned with turpentine, would do much to mitigate the nuisance.

The repair of old floor finishes brings problems of a special kind, and the nature and condition of the existing finish is a significant factor in deciding on the best material for the repair. A bakehouse floor needed renewing and the inquirer, when asking for advice on the choice of a suitable floor finish, explained that the existing floor construction was partly of concrete and partly of boards on joists. It was suggested that the floor should be reconditioned by laying a jointless floor such as magnesium oxychloride or cement-polyvinal acetate flooring over the whole surface because these compositions have the advantage of being suited for application on both types of subfloor. Other finishes, such as quarry tiles, offer the best surface qualities for conditions in a bakehouse, but were not considered suitable for laying on a badly worn floor. To minimise the risk of cracking, the jointless floorings should be reinforced with a wire mesh nailed at approximately 9 in. centres to the wooden floor. It should be remembered that metal work, such as gas, water and electrical services in contact with magnesium oxychloride flooring, is liable to corrode and should be isolated from the flooring by 1 in. of dense concrete or protected by a coating of bitumen.

Miscellaneous Materials and Problems

Cork tile, while a comparatively expensive material, has advantages of its own, chief among them being resilience. It was this property which probably inspired an inquiry as to whether cork tiles were suitable for the service side of a bar. The answer was that they were, but whilst the floor may be washed at infrequent intervals without detriment, the normal maintenance should be by polishing with a liquid wax emulsion. For the public side of the bar, however, a good quality heavy linoleum was suggested.

Information was sought on a method of repairing an old and worn wood block warehouse floor. As the inquirer was anxious to make a satisfactory repair as cheaply as possible the obvious method of laying new wood blocks was ruled out because a large area of resurfacing would be entailed.

In the circumstances he was advised to remove only worn and loose blocks and to fill the voids with a cement-bitumen emulsion mix. This material, which is essentially a cement mortar in which bitumen emulsion is used instead of water as the gauging liquid, is inexpensive and has the advantage of adhering well to the old work. Moreover, it can be trowelled off to a feather edge. Proper proportioning of the mix is important and the old concrete base must be cleaned and brushed with a priming coat of bitumen emulsion before the flooring is laid.

REFERENCES

Much scientific research has been done on floor finishes of all types and on the technique of their successful application. The findings of research work on the finishes referred to in this Bulletin and many others are contained in the following publications, copies of which are obtainable direct from the L.M.B.A., 47, Bedford Square, or from H.M.S.O.

National Building Studies.

Bulletin No. 5. The Laying of Linoleum on Concrete Floors, etc., 9d.

Bulletin No. 11. Floor Finishes for Houses and other non-industrial Buildings, 1s. 6d.

Special Report No. 11. Floor Finishes for Industrial Buildings, 1s. 6d.

Building Research Station Digests (price 3d. each).

No. 7. Lifting of Clay and Concrete Floor Tiles.
No. 24. Granolithic Concrete Floors.

Ministry of Works Advisory Leaflets (price 3d. each).

No. 5. Laying Screeds as an underlay for floor coverings.
No. 7. Concreting in Cold Weather.
No. 15. Sands for plasters, mortars and renderings.

Codes of Practice for Buildings. Obtainable from the British Standards Institution, 24, Victoria Street, S.W.1.

C.P. 201 (1951) Timber Flooring, 3s.
C.P. 202 (1951) Tile Flooring and Slab Flooring, 3s.
C.P. 203 (1951) Sheet and similar Flooring, 3s.
C.P. 204 (1951) In-Situ Flooring, 7s. 6d.

GYPSIES IN KENT

County Planning Officer's Report

THE Kent County Planning Officer's final report on the survey of gypsies and other travellers in Kent, which was carried out to assist the Ministry of Housing and Local Government in considering the general problem, has now been completed. A number of authorities and organisations gave assistance, and in addition the following "interested and knowledgeable persons were consulted with valuable results": Messrs. B. Vesey-Fitzgerald, "Gypsy" Williams, W. Larmour (of the London City Mission) and Will (Dromengro) Smith.

In a foreword to the report, the chairman of the Kent Planning Committee, Captain W. Wigham Richardson, states that the main purposes of the survey were to ascertain to what extent certain camps in Kent used as winter quarters by nomadic families, and the encampments of such families outside those camps, raised any problems requiring solution by the county council, or by local authorities; secondly, if there proved to be planning problems, to indicate their character and size; and lastly to provide some definite information as the basis of any action which might prove to be necessary or expedient.

The following extracts are taken from the summary of the report:—

1. The number of true Romanies in Kent is probably a small percentage of the total number of travellers or nomads.

2. Gypsies and other nomadic families generally make their own arrangements with owners to secure the use of sites for their encampments.

3. The chief problem appears to be that created by families occupying certain camps who are not really nomadic.

4. In February, 1952, about 1,150 persons lived in 18 camps, and it is estimated that not more than 350 persons classed as gypsies or travellers occupied individual sites.

5. In August, 1952, 988 persons occupied the 18 camps and 1,329 nomadic persons occupied other sites, mostly temporary summer sites on farms.

6. In September, 1952—during the hop-picking season — 671 persons occupied the 18 camps and 2,427 nomadic persons occupied other sites, mostly temporary summer sites on farms in the Weald of Kent.

7. Of the persons who in February, 1952, occupied winter camps in Kent (1,150), the majority lived in camps in West Kent and remained in those camps during the summer months, except during the short hop-picking and fruit-picking season.

8. Except during the late summer, gypsies and travellers as well as the "static" residents of the camps studied remained within or near large urban areas throughout the year. They are not to any appreciable extent engaged in regular agricultural work.

9. Individual gypsies and travellers who become skilled agricultural workers almost certainly cease at the same time to be nomads or camp dwellers.

10. Present practical difficulties regarding education are those inherent in nomadism, individualism or low economic position.

11. Present provision for their education is by ordinary schools. Attendance tends to be irregular. On leaving school, they have usually achieved little more than some acquaintance with the three R's.

12. The attendance of groups of gypsy children at ordinary schools need create no significant social problem. There is little evidence that standards of cleanliness and health differ widely from those of corresponding classes in the normal community.

13. Some observers suggest that nothing should be done to force or even encourage gypsies and travellers to forsake their nomadic existence. Others take the opposite view. It appears that a national decision as to the policy to be followed should precede the making of any long-term arrangements.

Painting Asbestos Cement

The way to avoid troubles when painting asbestos cement due to the porosity and alkalinity of this material is outlined in No. 28 in the M.O.W. series of advisory leaflets. It contains hints on preparing the surface, and on materials for the first coat, according to the type of paint or distemper to be used, and can be obtained at the Stationery Office, price 3d.

"HOUSING PROGRESS BLOCKED"

Civil Servants to Urge Review of Cuts in Research Staffs

THE Institution of Professional Civil Servants has issued a statement strongly criticising the action of the Government, in the name of "economy," for reducing staff engaged in building research work.

The statement says that while last Saturday morning's Press contained appreciative reports of Mr. Marples' speech when he visited an experiment organised by the Building Research Station of the Department of Scientific and Industrial Research near Norwich the previous day, what was not said was that as a result of Treasury-enforced economies the D.S.I.R. are having to dismiss as redundant some of the officers engaged on this experimental work and to reduce sharply the work that they are doing.

So far as the tower crane itself is concerned, the statement continues, the efficiency of the machine depends to a large extent on a well-planned site organisation. It is the work of the D.S.I.R. that has provided this particular type of site organisation and on which thorough education of building foremen is an essential element if the fullest possible use is to be made of the tower crane. It is the technical officers of the D.S.I.R. who are being declared redundant and whom the Department have threatened will receive their redundancy notice in the course of the next few days, who must undertake this educational work if it is to be done at all.

An aspect of the work of the D.S.I.R. which is being stopped by these so-called economy measures is that of the survey into the factors affecting man-hours and productivity in the house-building industry. The sample survey has been completed and is in course of analysis but the results of the analysis are not yet available. If the teams which undertook this work are broken up, as is threatened by these economy measures, it follows that it will not be possible to do the follow-up work, at any rate on the same lines as that of the original survey. Having regard to the importance of this issue of house-building, the statement says that it seems incredible that an "economy" of this kind should be imposed when the building of houses bulks so largely on the list of public necessities.

Other "Valuable Work"

There is also the very valuable work that has been done by the Building Research Station on hoists, mechanical barrows and other mechanical plant likely to be of special value to the relatively small builder. It needs to be remembered that the small builder accounts for by far the largest proportion of the building force of the country. This work is being stopped. The staff engaged on this work realise that much of what they have already done is merely the elementary stage of the work that could be done.

The Institution of Professional Civil Servants, it is stated, is much concerned at the imposing of alleged economies of this type. Protests about it have been made by the Council of the Royal Institute of British Architects and it is an interesting fact that both employers and employed in the building industry have also protested at these "economies."

The statement adds that the staff side of the departmental Whitley Council of the D.S.I.R. have asked the Lord President of the Council to receive a deputation so that they may ask him to reverse these decisions.

∴ The results of the Norwich tower crane experiment are given on page 881.—ED.

OFFICIAL NOTIFICATIONS

Steel Distribution Scheme

The Minister of Housing and Local Government, in circular 89/52, draws the attention of local authorities to new arrangements made in connection with the Steel Distribution Scheme. The circular states that for Period I of 1953 onwards no further use is to be made of I.S. Authorisations (A) and (G). Instead the acquisition of both alloy and non-alloy material will be authorised on a new form, "I.S. Authorisation (U)." I.S.B. Form 89 is to be used for this purpose, with certain amendments. The new form is being adopted forthwith for housing work other than that done under licence and for non-housing work, in respect of which authorisations are issued by the Department.

Softwood Imports

The Board of Trade announce that to ease congestion in the ports it has been decided to allow importation of softwood timber on and after December 15, against import licences which have been issued to meet 1953 requirements. Licence holders who are in possession of import licences which are marked "not valid for importation before January 1, 1953" may use such licences for imports on and after December 15, 1952.

Fire Precautions

The number of highly inflammable nitrocellulose lacquers marketed to-day for use as wood finishes has prompted the Fire Protection Association to publish a technical booklet entitled "The Surface Spread of Flame on Surfaces Treated with Nitrocellulose Lacquers." This is available from the Association at 84, Queen-street, E.C.4.

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RENT RESTRICTIONS AND THE REPAIR PROBLEM

Current Maintenance Costs Nearly Three Times Pre-war

IN a Report published last year, the Royal Institution of Chartered Surveyors made proposals for short-term amendment of the Rent Restrictions Acts which would allow increases in controlled rents to cover the increased costs of repairs. These proposals, the Institution states, have received strong support in many quarters as a fair and practical scheme for arresting the deterioration of houses and for securing their adequate maintenance and repair.

In its Report, the Institution published a detailed analysis of repair costs which showed that, in March, 1951, costs were 275 per cent. of the pre-war (1939) figures. The Institution has recently made a further analysis which shows that in November, 1952, repair costs had risen to 293 per cent. of the 1939 figures.

The 1951 Proposals

The proposals published in May, 1951 (and obtainable from 12, Great George-street, S.W.1, price 2s. 3d., post free), were designed to allow increases in controlled rents to cover the additional costs of repairs, which had risen considerably since before the war. To solve the problem, the essential points were: first, to establish what was the pre-war cost of repairing houses within the rent restrictions limits*; secondly, to ascertain the amount by which that cost had increased since 1939; and finally, to devise a scheme for raising rents to cover the increase. All these are technical and difficult questions, and there had hitherto been very little reliable data on costs.

An examination by the R.I.C.S. of pre-war repairs expenditure on many thousands of dwellings showed that on average the cost was equal to the relevant deductions from gross annual value to arrive at net annual value for rating purposes. This was clearly a sound and reliable basis for fixing increases in rents, since all rent-controlled dwellings are assessed for rates and the assessment is known to, or readily ascertainable by, both landlords and tenants.

The R.I.C.S. also made a detailed analysis of post-war maintenance costs, based on increases in the cost of labour and materials. This showed that in March, 1951, maintenance costs were 275 per cent. of the pre-war figures, and were still rising.†

Having thus related actual pre-war expenditure to an existing statutory allowance, the R.I.C.S. suggested that it would be a relatively simple matter to calculate an increased rent that would cover the subsequent increases, by adding to the existing rent a specified percentage of the statutory allowances mentioned above. The actual amount of the increase would be for Parliament to decide, in the light of costs at the time the necessary legislation was introduced; but if effect were now given to such a scheme, increases would be likely to average between four and five shillings a week.

* The Rent Restrictions Acts apply generally to all unfurnished dwelling-houses (other than post-1918 local authority dwellings), of which the rateable value does not exceed £100 in London and £75 elsewhere in England and Wales.

† As stated earlier, the corresponding figure for November, 1952, was 293 per cent.

NEWS IN BRIEF

Change of Address

The London (City) Offices of the Central Land Board and War Damage Commission have moved to City Gate House, Finsbury-square, E.C.2. Tel.: Monarch 6011.

Prefabricated Plumbing Units

McDonald Engineers (Kirkcaldy), Ltd., of Loughborough-road, Kirkcaldy, Fife, and 2, Norfolk-street, Strand, London, W.C.2, have obtained a contract worth $600,000 from the United States Air Forces in Europe for prefabricated plumbing units.

Fibre Building Boards

Information on brands, types and standard sizes can be found in the leaflet "Fibre Building Boards Register," recently published by the journal "Timber and Plywood," 194/200 Bishopsgate, E.C.2. Priced at 1s. 6d., the register has been brought up to date and a chipboard section added.

Domestic Light Fittings

A collection of contemporary Domestic Light Fittings, which have been selected as representing some of the best designs now available in Great Britain, are now on exhibition at The Building Centre, Store-street, Tottenham Court-road, W.C.1, until January 10 next. The exhibition is open daily from 9.30 a.m. to 5 p.m. (Saturdays, 9.30 a.m. to 1 p.m.).

Application of Mastic Asphalt

A booklet illustrating the principles of asphalt application in damp-proofing and tanking work has been issued by the Natural Asphalte Mine-Owners' and Manufacturers' Council. This follows the publication of a similar booklet which dealt with the application of mastic asphalt to roofs. Copies of both booklets may be obtained free from the Council.

Layout Problems

The depth of frontages on new housing estates is raising a fresh problem for local authorities with regard to the collection of house refuse. Rhyl Urban District Council may have to engage additional collection staff. When the streets backed to each other, the men collected bins for two streets at once, but the layout of the new housing estates entail greater distances on the part of the men, possibly amounting to another mile a day.

Special Lectures

Two special courses are being given at the Hammersmith School of Building and Arts and Crafts. The first, on "Influence Lines and Design," will be given by Dr. H. Gottfeldt, and consists of 12 lectures, commencing on January 19. The other, comprising six lectures, will be given by Mr. F. R. S. West and Mr. A. J. Polland, and is to begin on January 20. Its subject will be "The Builder and the Law." Fees for these courses are £2 and £1 respectively, and application forms may be obtained from the Secretary of the School, Lime-grove, Shepherds Bush, W.12.

Alleged Price Ring

Bellingham (Northumberland) Rural Council has decided to draw the attention of the Monopolies Commission to an alleged "ring" among firms supplying metal window frames. The Council's architect, Mr. T. R. Willey, reported that all the tenders received for the supply of metal windows for 26 houses were the same, and there appeared to be a price ring. Some of the councillors said it was useless inviting tenders for work when all the prices received were the same. Mr. Willey stated that he understood the Government was already aware of the alleged ring.

B.A.S.A. ROWING CLUB

A Remarkable Season

AT the annual meeting of the Building Apprentices and Students Association Rowing Club on December 4 a very successful year on the water was reported, the club having won several major events, including:

National Amateur Rowing Association "Head of the River," first in the Clinker Division; T.A.R.A. Regatta Barnes (Junior Eights); A.R.A. Thames Ditton (Sawtell Challenge Cup, Junior Eights); Hereford Regatta (Junior Eights); National Dock Labour (Junior Eights); Board's Regatta (Marsh Wallett Challenge Cup, Junior Eights); A.R.A. Metropolitan Regatta (Metropolitan Vase, Junior Eights).

Due to St. Paul's School requiring the full use of their boathouse, the club are now homeless and are making energetic efforts to find fresh accommodation before the commencement of the new season.

In presenting the accounts, the honorary secretary, Mr. S. G. Donno, stressed the great assistance in raising money during the current year from the Building Exhibition through the courtesy of the late Mr. Hugh Montgomery and the generosity of members of the London Master Builders' Association, Central Area No. 1. Extreme economy had been practised and all members paid their way during training and at regattas, but more money would have to be raised from outside the resources of the apprentice members themselves if the successful season was to be repeated in the coming year.

The club was generally accepted as being fully qualified to row in first-class events and it was the target and aim that they should compete at Henley Regatta in the coming season.

A NEW PUBLICATION

CHURCH ROOF COVERINGS

A survey of alternative materials and their method of use, prepared by a committee set up by the Central Council for the Care of Churches in conjunction with the Society for the Protection of Ancient Buildings.

PRICE 2/3; by Post 2/6

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TRADE NEWS

Stabilising Prices

Despite recent increases in the prices of brass and zinc, and wage increases, Keith Blackman, Ltd., Mill Mead-road, Tottenham, N.17, announce that until further notice they will not be making any advance in prices for goods of their manufacture, but that they will absorb these costs in their production. They hope this will be a step in halting inflation.

Timber Price Reference

A decimal timber reckoner has been issued by the Midland Joinery Works, Ltd., Burton-on-Trent. Compiled by Mr. M. Codling, the reckoner gives at a glance the price in pence for either one, 10 or 100 ft. run, for any size from 1 in. to 48 in. sectional area, at from £80 to £130 per standard. Also shown is the price per foot super and per foot cube, and matchings per square for each price per standard and the number of feet to a standard of each section.

The Use of Mastics

A useful booklet entitled "The Use of Mastics in Building" has been published by Secomastic, Ltd., 15, Upper Grosvenor-street, W.1. For the past two years this firm has been collecting and collating information on the best practice in the use of mastic in building construction and maintenance. This booklet, well illustrated and annotated, is the result of their study, and is available upon application to the firm.

Hangar Illumination

Hangars under construction for B.E.A. at London Airport are illuminated by "Ionlite" cold cathode fluorescent lighting fittings, supplied by Falk, Stadelmann and Co., Ltd., 91, Farringdon-road, E.C.1. This installation is in continuous rows at a height of 40 ft. above floor level. Shadowless light is obtained for the whole area of an intensity of about 25 foot-candles at floor level. No difficulties have been encountered due to spectacular reflection off the aircraft surfaces, and work can be carried out to the under side of the aircraft wings without local lighting.

New Solid Fuel Appliances

A new solid fuel appliance is being manufactured by Radiation, Ltd., Stratford-place, W.1. The "Loray," as it is called, has been designed to fit a standard 16-inch fireplace opening, but the bottom grate design is adaptable to variations in width of fireback and depth of opening. It is claimed that, economical in use, the fire will keep a room of up to 1,500 cu. ft. comfortably warm day and night, on 1 to 1½ cwt. of fuel a week. It is available in porcelain enamel finish in black, brick or fawn mottle, copper or fawn lustre.

Floor Planing Machine

Claimed to be the first production machine of its kind is the deck or floor planer produced by Nufloor, Ltd., 34, Lauriston-road, E.9. This machine is understood to be effective for levelling the most badly knotted, splintered or highly uneven floors in a very short time without the use of heavy-grade abrasives. Powered by a 1.5 h.p. electric motor or a 2.4 h.p. J.A.P. petrol engine, it incorporates a revolving cutter block which carries a pair of 8 in. high-speed steel knives with variable control. The planer was recently used during the reconstruction of Hammersmith Bridge for levelling the timber baulks supporting the wood blocks.

Heat Insulating Materials

The amount of heat lost in the average house through the roof and through ill-fitting doors and windows can sometimes exceed the total loss throughout the rest of the building. To conserve heat and thus save fuel, British Hermeseal, Ltd., 4, Park-lane, W.1, advise the use of their draught-exclusion and roof-insulating materials. A layer of glass-wool material, drawn into flexible fibres and bonded with bitumen, if laid across the joists in the attic, is claimed by the manufacturers to be able to reduce heat loss through the roof by 75 per cent. The use of weather-stripping, drop seals and sealing compounds is advocated by them to eliminate draughts altogether.

Portable Saw Bench

A multi-purpose saw bench which can be carried to the job by means of retractable sedan-type handles is being manufactured by Armand Dutry and Co. (Adeco), Ltd., 25, Hyde Park-gate, S.W.7. This machine, the "Circulex," can be supplied with Villiers petrol engines or Brooks electric motors, ranging from one h.p. to three h.p. In addition to circular saw blades with a depth of cut of five inches, accessories can be obtained which include moulding cutters, tile and steel cutting wheels and a protruding spindle with half-inch chuck to take drills. Dust extractors can be fitted if required, and a small compressor unit will shortly be available, as an extra, for fitting inside the saw bench.

Synthetic Resin Glues

Aero Research, Ltd., Duxford, Cambridge, have recently had made for them a series of three mobile display units, designed by Mr. Joseph Revill, M.S.I.A., who is responsible for much of the Timber Development Association exhibition work. The purpose of these portable stands is mainly instructional, to show how synthetic resin glues are used in building, woodworking, aircraft, sports goods and many other industries. The company are prepared to lend these units, separately or together, for display at handicraft centres, technical colleges or at small local exhibitions. The units lend themselves readily to a variety of arrangements to illustrate, for example, the gluing of plastics to wood or the bonding of aircraft structures or any other applications of synthetic resin glues in industry.

Electrical Hand-book

A hand-book published by the G.E.C., Magnet House, Kingsway, W.C.2, covers their complete range of electrical equipment needed for the installations of factories, commercial, domestic and other buildings. The Overseas Edition contains a supplement compiled to satisfy the needs of the engineer situated in remote regions. In general, the information contained in this hand-book is based on G.E.C. catalogue sections, and all prices are quoted exclusive of purchase tax. Because of changing circumstances, up-to-date prices cannot be quoted, so those are given which were current during the first three months of 1951. The latest prices may be obtained upon application to the company.

PERSONAL COLUMN

MESSRS. WAINWRIGHT AND WARING, LTD., metal and glass workers, of 14, Mortlake High-street, London, S.W.14, hereby give notice that the company is not represented by Mr. K. B. Woodhead.

OVERSEAS BUILDING

[From Our Own Correspondents]

Australia.—The contract has been let for the building of the main stadium for the 1956 Olympic Games in Melbourne. It will cost £A1,100,000. The stadium has been designed to accommodate 125,000 people, and will contain administration and other quarters. It will be built of concrete. The contractors are Ernest A. Watts. The Olympic authorities are also considering plans for the construction of an Olympic village, to accommodate up to 6,000 visiting athletes and officials, and probably 1,200 reporters.

Australia.—A large oil refinery is to be built near Sydney, Australia, at a cost of £20m. by the American firm of Caltex. The Australian subsidiary, Australian Oil Refining, Ltd., is raising a large part of the money required in London. The money will be spent in Britain for plant and materials intended for the new refinery.

Burma.—American consultants in Burma are pressing the Burmese Government to go ahead with their plans for the erection of a hydro-electric station and bamboo-pulp paper mill in Arakan. Plans for the development of coalfields in Kalewa in North Western Burma are also under consideration. These will necessitate the building of offices and other buildings required by the coal mining industry. An agreement signed recently in Washington between members of a Burmese Mission and the Head of Technical Co-operation Administration will provide Burma with $6,582,000 for development.

* *Canada.*—A new hospital for the city of Lethbridge and surrounding district is to be built in 1953 at a cost of about $3m. Construction on the building should commence next March or April. The architects are Messrs. Townley and Matheson, 1,376, Hornby-street, Vancouver, B.C. The contract for the construction of the building has not yet been put out to tender. U.K. firms or their agents interested in the supply of materials, e.g. metal windows, lifts, tile work and flooring, heating and air conditioning equipment, etc., should make early contact with the architects. Telephone inquiries to Trafalgar 8855, Ext. 2917.

* From the Board of Trade Special Register Information Service.

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India.—A scheme is being worked out to improve and expand the telephone system in Bombay. This will mean the erection of exchanges in the city, and already sites have been purchased at four different places on which will be built six-storeyed modern exchanges each costing £187,000. The Government of India has already given approval to a request for £3m. for the scheme. The Indian Minister for Commerce declared recently that the potentialities for developing hydro-electric power in the Ghats in South India are being studied.

South Africa.—The City Council of Johannesburg is to contribute £23,000 towards £150,000 required for the building of cottage-flats for 200 old people. As yet no plans have been made regarding the design of the buildings. Work is progressing on the terminal buildings for the £6m. Jan Smuts airport which is due to open in June next year. Building work will still continue when the airport is functioning. A new £325,000 factory to produce a special type of laminated wood is to be built at Port Elizabeth. The patent is Swiss and experts from Switzerland are expected to advise on the building of the factory. The Town Council of Benoni plans to spend £7,220,583 on building more than 13,000 houses for natives in the next 10 years.

Southern Rhodesia. — The Municipal Council of Umtali is to borrow a sum of £260,000 to be used on sewerage, roads, bridges, sidings, electricity supply, water supply and a native township. The South Rhodesian authorities have been offered the services of French technicians and materials for building of power stations, hydro-electric stations and irrigation works.

Southern Rhodesia.—A theatre is to be constructed at Umtali at a cost of £30,000. It is hoped to have the theatre open within 15 months. What is claimed to be the largest theatre in the African continent is to be erected for the occasion of the Central African Rhodes Centenary Exhibition at Bulawayo. The theatre will be 220 ft. long, 196 ft. wide and 49 ft. high, and will seat between 3,000 and 3,500 people. After the Exhibition the structure is to be sold elsewhere by the designers and contractors, Messrs. Patchett Steel Construction, Ltd. According to the South Rhodesian Minister of Trade and Industrial Development, there is about £3,060,000 worth of building work waiting to be done during the next six months consisting of individual contracts of £25,000 each or more in value.

Thailand.—Thailand is to embark on a five-year industrialisation plan according to reports circulating in Bangkok. The plan is estimated to cost £20m. and will cover the development of cottage dwellings, mineral resources, construction of chemical plants, construction of sugar, leather and hemp factories and the expansion of existing alcohol and paper factories. According to the same reports the Cabinet Council is considering a plan to develop the port at Kohsuchang and to build a modern harbour at Songkhla. The services of the German Dr. Agatz have been procured in an advisory

capacity. He designed the present Bangkok harbour before the war.

Turkey.—The Red Crescent Society of Turkey has allocated £4m. for the construction of health institutions in areas indicated by the Government. A new State hospital in Mus is to be built as well as a cancer hospital and institute in Ankara, a sanatorium for students in Istanbul, a maternity pavilion in Ismir as well as other miscellaneous health establishments. A draft law for the building of a university in eastern Turkey has been prepared and submitted to the Assembly. New secondary schools are also to be built in many districts.

Uganda.—Work still to be done on the Owen Falls scheme includes a roadway some 1,600 ft. long which will cross the Dam at Jinja. This is one of the many schemes under way to help in the industrialisation of the British East African countries. Within the next five years many developments are envisaged.

* *U.S.A.* — Mr. Edwin Bass, trading as Rudolf Bass, 175, Lafayette-street, New York 13, desires to contact U.K. manufacturers of woodworking and light metal working machine tools. He is especially interested in machines of new design. Those interested should communicate by air mail with the firm forwarding catalogues, prices (C.I.F. in U.S. currency) and details of delivery, etc. Telephone inquiries to Trafalgar 8855, Ext. 7804.

Gas Appliances for Canada

An article which appears in the December 6 issue of the *Board of Trade Journal* draws attention to the market for domestic gas appliances in Canada.

THE SCOTTISH BUILDER

National Trust for Scotland

THE opinion that many of Scotland's highly trained architects had been turned loose without a proper knowledge or appreciation of the Scottish background, or the method by which an old building could be kept together, was stressed by MR. IAN G. LINDSAY, A.R.S.A., F.R.I.A.S., when he spoke at the annual meeting of the National Trust for Scotland, in Edinburgh, on November 28. He was commenting on the lack of imagination shown in regard to the preservation of Scotland's old traditional houses.

The renovating of old houses was always supposed to be a very expensive pastime, he said, and indeed it was, but so was any kind of building. "The cost of a prefab is a staggering figure to pay for a temporary blot on the landscape with high maintenance expenses and the loss of, as so often, some good agricultural land. I venture to think that turning inwards again to the centres of our older burghs is not so wasteful as this. Many of our old houses can, I know, from having guided their renovations, be made into a couple of four- or five-roomed flats for around £3,000."

In some cases this had involved the complete removal and replacement of the roof together with most of the floors with their joists and so forth, an entire new plumbing system, new plaster work and, in fact, in some cases, almost everything new except the old walls. Even so the cost was often less than, or at least around the same as, building new houses. But even should it be more, as it well could be, was it not incumbent and desirable to make the effort?

A common fallacy which had been rife for the last 100 years or so was that old houses should look "stoney" and the more they approached the appearance of a vertical rock garden the more venerable they must be. For an ancient monument which was a museum piece this might be all right so that the studious antiquarian could pick out the various building periods, but by and large the stripping of harling, and pointing the masonry beneath in cement mortar, had had a most detrimental effect on Scotland's old buildings. We were beginning to reap the harvest of this mistake of previous generations in the shape of flaking and crumbling stones; time and time again the faults could be traced to a "restoration" 40 or 50 years ago.

"Our remoter ancestors," continued Mr. Lindsay, "were no fools about building, for their harling and limewash was a skin which preserved the stone from weathering and decay just as our skins protect whatever is underneath from undue damage. I am delighted to hear that the forthcoming renovations in the Canongate are to be carried out in a traditional manner rather than according to Victorian convention."

With regard to the above-mentioned aspects of renovation and many other important details, the Trust was very willing to advise for it was setting up a panel of architects expert in such matters.

In conclusion Mr. Lindsay stressed that the Trust was going all out in this matter of the preservation of Scotland's national heritage of small houses. Its object was not to encumber the land with museums but to give the people of Scotland civilised decent homes of character and beauty.

Presiding at the meeting, LORD WEMYSS said that it had been decided by the Trust to make an appeal for Coronation year to help in the preservation of some special groups of houses. They were thinking particularly of the ancient town of Dunkeld and the little houses leading up to the Cathedral. He also suggested that local authorities and large landowners might make a special effort towards the preservation of old buildings for Coronation year.

THE EARL OF HOME, Minister of State for Scotland, said he hoped that local authorities would take advantage of the provisions of the Housing Act of 1950, since there were a great number of houses which could be made habitable at reasonable cost, and which, either singly or in groups, when well repaired would create an amenity of lasting local satisfaction and of great attraction to visitors.

The annual report of the Trust states that both the National Trust for Scotland and for England feel strongly that the most urgent and effective steps should be taken along the lines of the Gowers Report, which was produced by the committee set up to consider the future of houses of outstanding historic and architectural interest.

Educationists Visit Power Station

FOLLOWING A Council meeting at the Heriot-Watt College, Edinburgh, members of the Scottish Association for Building Education recently paid a visit to the Portobello Power Station, through the courtesy of the South East Scotland Electricity Board, where large structural alterations to the existing premises are now in progress.

A great deal of underpinning is required to lower the existing foundations, and interest was centred on the prestressed concrete work and the types of pile foundations required for the superstructure.

Having seen this work in progress, the party made a tour of the existing power station where the intricacies of a large modern station were explained.

NEW BUILDINGS

Bellshill.—Lanarkshire C.C. to erect 100 houses at Orbiston, for which the architect is Samuel MacColl (A.), County-chbrs., Beckford-st., Hamilton West.

Cambuslang.—Lanarkshire C.C. to erect 136 houses for which plans are in the hands of Samuel MacColl (F.), County-chbrs., Beckford-st., Hamilton West.

Falkirk.—Dean of Guild Court has approved plans for the erection by the town council of 18 flatted houses at the Langlees site at an estimated cost of £27,800.

Fife.—A new general hospital with 350 beds is planned for Cameron Bridge, and a surgical unit of 100 beds, and theatres, etc., is to be added to Victoria Hospital, Kirkcaldy. Kirkcaldy General will be altered and an extension made at Stratheden Mental Hospital.

Glasgow.—Plans to be prepared for the Western Reg. Hosp. Bd. for alterations and additions at The Southern General Hospital, Paisley-rd. West. Shieldhall. The architects are John Keppie & Henderson and G. M. Cleves (F. and A.), 196, West Regent-st., Glasgow.

Glasgow.—Plans to be prepared for the erection of new buildings at Pitt-st. The architects are Frank Burnet, Boston & Bell (F. & A.), 180, Hope-st., Glasgow.

Glasgow.—Plans to be prepared for new Amenities Block, etc., for The Federated Foundries, Ltd., to be erected at Hawthorn-st., Springburn. The architect is Thomas S. Cordiner (A.), Blythswood-chbrs., West George-st., Glasgow.

Glasgow.—Plans to be prepared for new Nursery School to be erected at Hallside-rd. The architect is John MacNab (F.), 129, Bath-st., Glasgow.

Inverness.—Thomson and Brown Bros., Ltd., are to build a block of warehouses and offices at Inverness at a cost of £25,000.

Kirkfieldbank.—Plans in hand for new engineering works for J. & R. Meikle, Ltd. The architect is George Watson, Calderwellside, Drome-rd., Lanark.

Lanarkshire.—Plans in hand for new Chapel extensions at Whitestrope, Newmains, for which the architects are Frederick Smith & Partners (F.), F.R.I.A.S., 4, Regern-st., The Cross, Hamilton.

Lockerby.—Dumfriesshire C.C. to have plans prepared for an Old Folk's Home at Benskay. The architect is George Batholemue, A.R.I.A.S., A.R.I.B.A., County-chbrs., Dumfries.

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FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

DECEMBER 16.

***†Surrey C.C.**—Primary school, Merstham. County Architect, Kingston-on-Thames.

DECEMBER 17.

***†Rochester City.**—Houses on various estates. Lt.-Col. W. Law, City S., 66, Maidstone-rd.

DECEMBER 19.

***†Arnold U.D.C.**—7 pairs of houses, Killisick housing estate. E. & S. Dep. £2 2s. Tenders by January 13.

DECEMBER 22.

***†Beds C.C.**—Detached smallholder's cottage on three sites. County Architect, Bedford.

***†Chester City C.**—211 houses and flats on Blacon housing estate. City E. & S., Municipal Offices, 43, Northgate-st.

***†Hove Boro'.**—20 houses and 110 flats (three contracts), Hangleton Park estate. T. R. Humble, B.S. Dep. £3 3s. each contract. Tenders by January 19.

***†Ipswich B.C.**—New rest room at Whitton Open-air Special School. Johns & Slater (F/A.), 32, Foundation-st., Ipswich. Dep. £2 2s. Tenders by January 6.

***West Ham B.C.**—Extensions to "West Ham Lodge," Avenue-rd., Harold Wood. Boro' A., 70, West Ham-la., Stratford, E.15. Dep. £2 2s.

DECEMBER 26.

***Glasgow Corpn.**—32 flats at Lamlash-cres., Cranhill. Director of Housing, 2nd Floor, 20, Trongate.

DECEMBER 29.

***Aylesbury B.C.**—120 flats at Buckingham-rd. B.E., Town Hall. Dep. £2 2s.

Wetherby R.D.C.—Erection of 14 houses at Spofforth. Anthony Steel & Owen, A.R.I.B.A., 89, Albion-st., Leeds, 1.

Wirral U.D.C.—8 houses and 12 garages on Oaklea housing estate. F. Roberts, clerk, Council Offices, Heswall. Dep. £5 5s.

DECEMBER 30.

Truro R.D.C.—24 houses at various sites. J. Snellgrove, surveyor, 26, Coinagehall-st., Helston. Dep. £2 2s.

DECEMBER 31.

***†Hartley Wintney R.D.C.**—(1) 14 dwellings at Rye Common, Dogmerfield; (2) 12 dwellings at Hitches-la., Crookham-st. Clerk to the Council.

***†Paddington B.C.**—113 flats at John Aird-ct. (stage H). T.C., Town Hall. Dep. £5 5s.

***†Salop C.C.**—Secondary modern school, Wrockwardine Wood, near Wellington. C. H. Simmons, County Architect, Column House, London-rd., Shrewsbury.

JANUARY 1.

Chepstow R.D.C.—Erection of 44 houses, etc., at Portskewett. Stephen Thomas, A.R.I.B.A., Metropolitan Bank-chbrs., 26, Commercial-st., Newport. Dep. £3 3s.

JANUARY 2.

***Depwade R.D.C.**—62 bungalows and 2 houses on various sites. A. F. Scott & Sons, architects, 23, Tombland, Norwich. Dep. £3.

***Reigate Boro'.**—53 houses, Green-lane estate. B.E. & S. Dep. £4 4s.

JANUARY 3.

Coulsdon and Purley U.D.C.—E. & S., Council Offices, Purley. (Materials.)

***Oldham C.B.**—103 houses, Holts estate. Cameron & Middleton, surveyors, 21, Queen-st. Dep. £2 2s.

***†Portsmouth City C.**—(1) 63 flats at Northern-parade; (2) 156 flats at Eastern-rd.; (3) 128 houses at Leigh-park. City A., Municipal Offices, 1, Western-parade, Southsea. Dep. £3 3s.

JANUARY 5.

***†Bury St. Edmunds B.C.**—40 houses at Baldwin-ave., Mildenhall-rd. estate. B.E. & S., Borough Offices. Dep. £2 2s.

Hemel Hempstead R.D.C.—Six houses on the Flaunden housing scheme. E. & S., No. 2, Marlowes, Hemel Hempstead. Dep. £2 2s.

JANUARY 6.

Denton U.D.C.—8 flats and 2 houses at Haughton Hall. E. & S. Dep. £2 2s.

JANUARY 7.

***Guildford R.D.C.**—3 bungalows at Queen-st., Gomshall. E. & S., Milmead House. Dep. £2 2s.

JANUARY 8.

***Chertsey U.D.C.**—Convenience, Kingthorpe-gdns., Addlestone. E. & S. Dep. £1 1s.

JANUARY 10.

Penzance T.C.—4 flats, 1 shop and road at Gwavas estate. B.E. Dep. £1 1s.

***Walthamstow Boro'.**—42 flats, Manor House, Vincent-rd., E.4. Boro' A. Dep. £2 2s.

JANUARY 12.

***Chester R.D.C.**—22 houses at Saughall. T. Eaton, A.R.I.B.A., 16, White Friars. Dep. £3 3s.

***Durham C.C.**—Mining training centre, Easington. Director of Education, Durham.

***Smethwick B.C.**—202 houses at Brandhall-rd. and Bleakhouse-rd., Oldbury. B.E. & S., Council House. Dep. £2 2s.

JANUARY 13.

***Billingham U.D.C.**—136 houses (in 5 contracts). E. & S. Dep. £2 2s.

South Shields T.C.—15 flats at Lawe-rd. B.E. Dep. £2 2s.

JANUARY 17.

***Ely U.D.C.**—14 houses at Steward-close, Stuntney. E. & S., Urban Council Offices, Lynn-rd. Dep. £1 1s.

JANUARY 19.

***Cuckfield R.D.C.**—12 dwellings at Clappers-la., Fulking. E. & S. Dep. £2 2s.

***Rushden U.D.C.**—4 flats, Blinco-rd. E. & S.

JANUARY 23.

***†York City C.**—Restoration of the Guildhall. City A., 8, St. Leonard's-pl.

NO DATE.

†Bridport R.D.C.—72 dwellings and site works at Bradpole housing site. L. Maddocks, architect, Surveyor's Office, Victoria-gr.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

DECEMBER 31.

Weymouth and Melcombe Regis B.C.—Demolition of 20 bomb-damaged houses in the Chapelhay area. B.E. & S., 6, Pulteney-bldgs., Weymouth. Dep. £1 1s.

JANUARY 1.

Lincoln C.C.—County S., County Offices, Sleaford. (Materials.)

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JANUARY 2.

Lichfield City C.—City E. & S. (Materials.)

Montgomeryshire C.C.—County Clerk, Welshpool. (Materials.)

JANUARY 3.

Bexley B.C.—E. & S., West Lodge, Broadway, Bexleyheath. (Materials.)

Cambridgeshire C.C.—County S. (Materials.)

Monmouthshire C.C.—County E. & S., "Stelvio," Bassaleg-rd., Newport. (Materials.)

Norfolk C.C.—County S. (Materials.)

JANUARY 7.

Devon C.C.—Clerk, The Castle, Exeter. (Materials.)

JANUARY 19.

Ealing B.C.—B.E. & S. (Materials.)

JANUARY 31.

Camborne-Redruth U.D.C.—Clerk to the Council. (Materials.)

ROADS, SEWERAGE AND WATER WORKS

DECEMBER 29.

Swanage U.D.C.—Roads at Greyseed estate. Crickmay & Sons (F/F.), 88, St. Thomas-st., Weymouth. Dep. £2 2s.

DECEMBER 30.

Chelmsford B.C.—Roads and sewers at Westlands estate, site 18. B.E. & S. Dep. £2 2s.

DECEMBER 31.

†Blyth R.D.C.—40 miles of pipelaying. Binnie, Deacon & Gourley, Artillery House, Artillery-row, Westminster, S.W.1. Dep. £10. Tenders by January 23.

Stoke-on-Trent City C.—Site works at Drubbery-la. housing estate, Blurton. City E. & S., Town Hall. Dep. £3.

JANUARY 2.

Barnet U.D.C.—Advanced preparation of roads and sewers on the Whitings Hill housing estate—section 1. E. & S., Ravenscroft House, Wood-st., Barnet.

JANUARY 3.

Portsmouth City C.—1,175 lin. yds. of sewer at Eastern-rd. City E., 1, Clarence-parade. Dep. £5 5s.

JANUARY 17.

Rugby R.D.C.—Roads and sewers at Marton, Princethorpe and Dunchurch housing site. Council S., 24, Warwick-st. Dep. £3 3s.

JANUARY 19.

Nottingham City C.—Two miles of main at Shelford, Bingham. E. & Gen. Mgr., Water Department, Castle Boulevard. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Edmonton.—CLINIC.—Provision of clinic at junction of Hertford-rd. and Forest-rd. to replace unsatisfactory clinic accommodation is recommended to Middx C.C. for submission to Ministry for approval. Estimated cost £18,000.

Hammersmith.—PUBLIC HOUSE.—J.P. approval has been given to proposal by Stewart & Hendry, architects, 90, Fenchurch-st., E.C.3, for the erection of a public house on south-east side of White City housing estate, South Africa-rd., W.12.

Hammersmith. — FLATS. — Proposed erection of three-story block of three flats, for B.C., at 29/31 Starfield-rd., W.12, has been approved by C.C. Architect is B. Peake, 13, Dover-st., W.1.

Hammersmith.—SHOP FRONT.—Proposal by Williams, Pettett & Hope, architects, 58, High-st., Epsom, to install a new shop front at 40, King-st., W.6, has received T.P. permission.

Ilford. — SCHOOL EXTENSIONS. — T.C. are recommended to erect two additional classrooms at Highlands School, estimated cost £5,024.

Kensington.—SITE DEVELOPMENT.—Stage I approval has been given by L.C.C. to the use of the following sites for housing purposes: 19-27, Acklam-rd.; 10-14, 28-30, Blagrove-rd.; 275-277 and 297, Ladbroke-gr.; 53, 55 and 57, Faraday-rd.; 42, 44 and 84, Tavistock-cres.; 61, 63 and 65, Tavistock-rd.; 23, Basing-st.; 140-144 and 123, Finborough-rd.; 82 and 84, Redcliffe-sq.

Ruislip.—SCHOOL.—C.C. recommended to approve revised scheme for erection of Northwood Hills (Joel-st.) secondary grammar school. Est. cost £173,845.

St. Marylebone.—REHABILITATION.—Plans for the final rehabilitation of Bedford House as a national headquarters and hostel for the Y.W.C.A. are being prepared by P. Goodridge, 59, Gloucester-pl., W.1.

Southall.—CLINIC.—Middx C.C. recommended to submit to Ministry for approval proposals to replace Manor House with a new building at est. cost of £14,500, or to adapt existing building at est. cost of £8,500.

Southgate.—SITE ACQUISITION.—T.C. is to acquire a site at Bowes-rd. between Waterfall-rd. and Ravenscraig-rd. for the erection of 52 flats. Plans are being prepared by Boro' A.

Wembley.—SCHOOL.—Extensions to the Kingsbury county grammar school at est. cost £90,420 are recommended to Middx C.C. for approval.

Willesden.—FLATS.—T.C. recommended to approve plans for erection of 26 flats to Harvist-rd., 8 flats at Rucklidge-ave. and two houses at Brownlow-rd., prepared by Boro' A.

Wood Green.—FLATS.—T.C. are to erect 21 flats at Eldon-rd. site. Plans by Boro' E.

(PROVINCIAL)

Accrington.—T.C. to obtain tender from John Laing & Son, Ltd., for erection of 96 three-storey flats at site No. 2, Burnley-rd. estate.

Atoham.—R.D.C. propose 32 houses at Minsterley, 30 at Cressage, 18 at Grafton and 12 at Eaton Constantine.

Berwick.—T.C. is seeking sanction for another 64 houses on the Prior Park Estate and 28 houses in Lions-gdns., Ravensdowne. B.S. is J. Armitage.

Billingham-on-Tees.—Amended plans have been approved for rebuilding copperas handling plant, Haverton Hill-rd., for British Titan Products, Ltd. —Durham C.C. are to erect 10 police houses at the junction of Belasis-la. and Bedale-av., to plans by the County A., Court-la., Durham.—U.D.C. is considering erection of 24 houses at Port Clarence.

Brighton.—E.C. to erect one-storey building in temporary construction in playground of Preston Technical Institute, to house new electrical installation workshop, enlarge engineering workshop, and adapt two classrooms to provide science laboratory. Education Officer, Marlborough House, Old Steine.

Bury St. Edmunds.—The plans and designs by Mr. S. E. Dykes Bower, M.A., F.R.I.B.A., F.S.A., of the whole scheme of the development of the Bury St. Edmunds Cathedral have been completed and submitted to the Cathedral's Advisory Committee of the Central Council for the Care of Churches.

Carlisle.—City C. is to place contract for 22 bungalows at Lingmoor Way, Harraby, to plans by L. J. A. Stow, City E., 18, Fisher-st., Carlisle.

Congleton.—T.C. to negotiate contracts for erection of 201 houses at Bromley Farm estate.

Cumberland.—C.C.'s scheme for alterations and additions to courtroom at Grecian Villa, Cockermouth, is out to tender. Plans by County A., Portland-sq., Carlisle.

Doncaster.—T.C. are to erect 292 houses on the Cantley and Intake estates.

Dover.—R.D.C. is acquiring land at Temple Ewell by Target Firs-rd. for housing purposes.— The Architect is to prepare plans for 22 houses, eight flats and two bungalows on this land.—Architect is also to inspect site of R.M. Camp, Ringwould, and, if suitable, to submit a tentative layout for the building of six bungalows.

Durham.—R.D.C. has approved layout plans by Hsg. A. for 16 houses at Bearpark and 146 near Whitehouse Wood, Bearpark.—R.D.C. is to erect six houses at Bearpark, and to sell a site at Sherburn to the Pittington Amicable Industrial Society, Ltd.

Durham.—C.C. are to erect an ambulance station at Stockton and at Crook. County A. is G. R. Clayton, Court-la., Durham.

Durham. — Durham Divisional Coal Board, Milburn House, Newcastle-on-Tyne, have approved a £375,000 plan for a coal-washing plant at Herrington Colliery.

Greenock.—John Walker & Co. (Sugar Refiners), Ltd., have received the support of the Ministry of Food in a proposed application for modernisation of their Greenock refinery, at an estimated cost of approx. £190,500. Total scheme of which this is part will cost approx. £300,000. The intention is to modernise the buildings and plant presently used for raw sugar storage and affination.

Keighley.—T.C. propose 650 houses between Guard House estate and Braithwaite.

Loftus.—Cleveland Water Co. is to be authorised by Government to raise capital for construction of a new dam of 330 million gals. at Scaling, the construction of two service reservoirs and 12½ miles of mains, in addition to a pumping station. Consulting engineers are Waterhouse & Rounthwaite, 165, Westmorland-rd., Newcastle-on-Tyne.

Lytham St. Annes.—T.C. propose 370 houses at Smithy-la. and Blackpool-rd. site.

Manchester.—Manchester and Salford Methodist Mission to restore Central Hall, Oldham Street. Estimated cost, £80,000.

Manchester.—Metrovick, Ltd., seek M.O.S. approval for large new factory at Wythenshawe.

Manchester.—T.C. propose alterations to London-rd. Fire Station in 1953-4 programme. Tenders are to be invited shortly for Newall Green R.C. Secondary School. T.C. have approved eight houses and two cottage flats, Wastdale-rd. and Weston-rd., Baguley.

Manchester.—Hsg. Comm. propose to erect 158 houses on the Hillside Estate, Blackley, at cost of £239,685. It is anticipated that 322 houses and 84 flats will be built in the Greenwood-rd. area of Wythenshawe.

Middleton.—B.C. approved two prototype children's homes at Berwyn-ave. for Lancs C.C.—T.C. approved sketch layout for Alkrington neighbourhood unit.

Newcastle-on-Tyne. — City C. is to build a bus station on the site of the old infirmary in Scotswood-rd. City A., G. Kenyon, 18, Cloth Market, Newcastle.

Newcastle-on-Tyne.—Construction of superstructure for control building at new Stella South power-station for the British Electricity Authority: Sir R. McAlpine & Sons, Star-bldgs., Newcastle-on-Tyne.

Newcastle-on-Tyne.—City C. is to erect five police houses in Slatyford-la., to plans by City A., 18, Cloth Market, Newcastle.—Cussins, Ltd., builders, Gosforth, are to erect six houses in Kenton-ave.—Marshall & Tweedy, 36, Blackett-st., Newcastle, are architects for an additional storey at 25, King-st., for the Tyne-Tees Shipping Co., Ltd., and 18 houses in Cloverdale-gdns., for J. T. Bell & Sons, builders, Northumberland-pl., Newcastle-on-Tyne.

Newcastle-on-Tyne.—New tenders are to be obtained by E.C. for the Stocksfield-ave. County Primary School. A. H. Davis & Ptnr., 28, Osborne-rd., Newcastle, have been appointed quantity surveyors by the E.C. for proposed alterations to Pendower Open-Air School and the Central Clinic in City-rd.

Newcastle-under-Lyme.—B.C. approved plans for pithead baths at Silverdale Colliery for N.C.B.; and alterations and extensions to offices and lavatories at Metallic Tileries, Chesterton, for the Metallic Tile Co., Rowley Bros., Ltd. They have also approved in principle secondary modern school at Chesterton.

Northampton.—T.C. approved sketch plans for a branch library, small block of flats, police building, bus shelter and public lavatories at junction of Harborough-rd. and Kingsland-ave.—B.C. approved erection of residential block for aged at Kings Heath.

North Riding. — C.C. has received sanction to build schools at South Bank and Thornaby.—Schools, at Eston and Marske, have also been approved. County A., J. Catchpole, County Hall, Northallerton.

North Riding.—County Health Com. is to include in its estimates £30,120 for ambulance stations at Whitby, Thornaby and Guisborough, and houses for the ambulance staff at Richmond. County A. is H. J. Knowles, County Hall, Northallerton.

Northumberland.—Forestry Commission is to build a village of 80 houses at Rochester and a village of 250 houses, with shops and amenities, near Wark, North Tyne. Plans by M.O.W., Broadway, Gosforth, Newcastle.

Oldham.—B.C. approved plans for 24 terraced houses at Ralstone-ave. and 11 at Lorne-st., for Bentley Building Co., Ltd.

Railway Executive.—British Railways are to brighten 998 stations and depots during Coronation Year. The repainting will cost over £1m. and the number of stations and depots to be repainted in each region is: Eastern, 176; London Midland, 235; North Eastern, 95; Scottish, 139; Southern, 88; Western, 165.

Redditch.—U.D.C. propose erection of new Town hall, estimated at £60,000.

Ripon.—City C. is to erect 280 houses at Lead-la.

Rotherham.—T.C. propose erection of industrial centre, adjoining occupation centre at Ferham House, estimated at £12,100. E.C. received M.E. approval for two-form entry infants' department adjoining existing Herringthorpe Primary School.

Rothwell.—U.D.C. have approved the erection of 20 houses at St. George's-cres., by W. W. Schofield & Sons, Ltd.—U.D.C. has selected site at Lofthouse to provide for erection of three or four blocks of aged persons' bungalows.

Salford.—T.C. seek loan of £12,500 for branch library at Stott-la.

Salford.—H. Morris, Ltd., propose showrooms and offices at 337-343, Chapel-st.—Cussons, Ltd., propose further extensions to factory at Kersal Vale.

Seaham.—U.D.C. is to acquire 34 acres of housing land at Northlea and 46 acres at Parkside. Surveyor, A. M. Smith, has prepared plans for conveniences at Deneside.

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Seaton Valley.—The U.D.C. is contemplating 100 "Unity"-type houses at Cramlington. Discussions are taking place regarding prices.

Sedgley.—U.D.C. to invite tenders for 70 houses at Stickley-la. site, ext. Architect, A. Young, 3, Newhall-st., Birmingham.

South Shields.—Corpn. Welfare Com. approved scheme for converting six empty cottages in Oakleigh-gdns. into old people's hostel. There will be accommodation for 50 women. Boro' E., John Reid, Town Hall.

South Shields.—T.C. is being allocated £100,000 next year for the redevelopment of war-damaged business premises in Market Place area. First scheme is for new shops for Jackson & Sons, clothiers, which are estimated to cost £30,000. Second scheme is new stores for Allen & Co., for which the architects are S. W. Milburn & Partners, 9, Esplanade, Sunderland.

Sowerby Bridge.—U.D.C. preparing scheme for 14 houses and 12 flats on the other site of Grove-cres.

Spennymoor.—U.D.C. is seeking loan sanction for £69,088 for 54 houses, Durham-rd. Builder is J. Parsons, Houghton-le-Spring, and the architect, G. H. Gray, Camden-st., North Shields.

Stockton-on-Tees.—B.A., T. C. Hartley, is to prepare plans for houses on about 10 acres of land at Newham Grange, and the development of land fronting Durham-rd., and also in Dumbarton-ave. Layout plans by the Boro' A. for 40 houses at Roseworth have been approved.—Plans have also been approved for warehouse in Brunswick-st. for Warren and Wellstood and layout of Fairfield Farm estate for Moorhouse and Barker, builders, Thornaby.

Stockton-on-Tees.—R.D.C. received loan sanction at £21,200 for 18 houses at Stillington. A further four acres of land at Preston are to be used for housing.

Stoke-on-Trent.—T.C. approved plans for 46 houses at rear of Newcastle-rd. and Ronson-ave., Springfields, Trent Vale; 68 at rear of Ruxley-rd., Millett-rd. and Werrington-rd., Bucknall; and 22 fronting Hampfield-rd.

Sunderland.—J. Wilks, 29, King-st., South Shields, is the architect for a proposed £17,000 animal clinic in Charles-st., for the R.S.P.C.A.

Tynemouth.—A. and E. Brannen, builders, Trevorter., North Shields, have been granted licences for 12 houses at the Broadway.

Wakefield.—R.D.C. seek loan of £24,938 for 20 houses at Walton.

Wallsend.—Hanson & Son, 123, Northumberland-st., Newcastle-on-Tyne, have submitted plans to T.C. for 164 houses on Low Willington Farm estate. The layout has been approved. T.C. is seeking loan sanction for £20,718 for the purchase of 344 acres of land from the Battle Hill Estate Co., Ltd.

Warsop.—U.D.C. to negotiate with R. Kirk (Mansfield), Ltd., for 30 houses at Sherwood-st.

Worksop.—T.C. approved erection of shops and maisonette flats over on island site at Manton.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Ayr.—Erection of new workshops and other buildings, for The N.C.B., Scottish Division, at Kellock. W. S. Drysdale & G. H. Robertson, architects and engineers, Eglinton-cres., Edinburgh: *James Laidlaw & Sons, Ltd., Rutherglen.

Bakewell.—Houses, for R.D.C. 15 at Bradwell: *Furniss & Hassall, Station-rd., Great Longstone. £22,615. 7 at Hartington Middle Quarter: *Warner & Birch, 21, Station-rd., Ashbourne, £10,964. 18 at Hathersage: *C. L. Marcroft, £26,567. 10 at Tideswell: *F. Hill, £14,610.

Bedlington.—Supply and erection of 16 shop fronts for shops being erected on the Stead-la. estate by U.D.C.: *D. R. Carter, Ltd., London, N.1.

Blackpool.—Erection of 10 flats and 8 flats at Toronto-ave. and Moor Park-ave., for T.C.: *John Halstead, Ltd., 19-21, Highfield-rd., South Shore, Blackpool, £21,480.

Bolton.—22 dwellings and 4 shops at Johnson Fold estate, for T.C. Thomas P. Rae, L.R.I.B.A., F.I.Hsg., Housing Director, Town Hall: *F. Pardon, Ltd., Glebe-st., Bridgeman-pl., Bolton, £32,968.

Brackley.—16 houses, two flats and one shop, for T.C.: *F. A. Hedges, Syresham, £24,449.

Brownhills.—37 houses at Salters-rd., for U.D.C.: Direct Labour, £55,514.

Camberwell.—Erection of three-storey block of six flats on housing site No. 64 (Crawther-gr.), for B.C.

J. Allen & Sons, Ltd., S.E.14	£17,351
Beresford and Williams, S.W.12	14,157
Chas. H. Graff, Ltd., Horley, Surrey... ...	13,143
Halse & Sons, Ltd, S.E.18...	12,496
Elsworthy, Ltd., N.W.8	12,465
S. P. Lewis, Ltd., S.E.22	12,442
Fredk. Mark, Ltd., N.W.1	12,374
Chamberlain Industries, Ltd., E.10	12,333
Jones and Feasey, Ltd., S.E.6	11,999
Director of Housing	11,940
Wm. Blood, Ltd., S.E.11	11,900
Thos. Wilson & Co., S.W.9	11,587
C. H. Gibson, Ltd., Croydon	11,586
A. N. Coles (Contractors), Ltd., W.2 ...	11,364

T. W. Weeks & Co., Ltd., S.W.11 ... ... £11,220
J. W. Ashdown, Ltd., S.E.14 11,164
B. Patten, Ltd., S.W.17 11,010
C. Graham Smith (Bldrs), Ltd., S.E.17 ... 10,986
Lander and Houghton, Ltd., N.W.1 10,899
S. Varney & Co., Ltd., S.E.24 10,812
C.A.S. (Contractors), Ltd., S.W.10 10,807
‡James, Shackell & Co., Ltd., 182, Finchley-rd., Hampstead, N.W.3 10,716

Camberwell.—Erection of three-storey block of six flats on housing site No. 62 (Gowlett-rd.), for B.C. Bowler and Gale, S.E.22 ... ... £17,933
Peace & Co. (Bldrs.), Ltd., N.4 13,862
Killby and Gayford, Ltd., E.C.2 13,287
W. Harris, Ltd., E.16 12,932
Westwood and Defago, S.E.20 12,314
Richard Costain, Ltd., S.E.1 12,260
S. P. Lewis, Ltd., S.E.22 12,217
L. Fowler & Co. (Bldrs.), Ltd., S.E.6 ... 12,200
Chas. H. Gaff, Ltd., S.E.1 12,197
F. T. Wooding & Sons, Ltd., S.E.24 12,175
Frank Bartlett, Ltd., W.12 12,161
Jones and Feasey, Ltd., S.E.6 11,999
E. C. Arter, Ltd., S.E.15 11,966
Director of Housing 11,920
Owen Johnson Building, Ltd., S.E.14 11,883
Thos. Wilson & Co., S.W.9 11,776
C. H. Gibson, Ltd., Croydon 11,597
A. N. Coles (Contractors), Ltd., W.2 11,516
Wm. Blood, Ltd., S.E.11 11,400
J. W. Ashdown, Ltd., S.E.14 11,165
C. Graham Smith (Bldrs.), Ltd., S.E.17... 11,081
S. Varney & Co., Ltd., S.E.24 10,912
James, Shackell & Co., Ltd., N.W.3 10,851
Lander and Houghton, Ltd., N.W.1 10,824
C. W. Froy & Sons, Ltd., S.E.22 10,813
‡C.A.S. (Contractors), Ltd., 7, Drayton-gdns., Kensington, S.W.10 10,813
R. Patten, Ltd., S.W.17 10,531
P. G. Woodley, Ltd., S.W.19 10,310

Camberwell.—Erection of three-storey block of nine flats on housing site No. 56 (Reedham-st.), for B.C.
Cleanco, Ltd., Crown Works, S.E.1 ... ... £21,596
W. Harris, Ltd., E.16 20,000
S. Choppen & Son, S.E.17 18,381
Westwood and Defago, S.E.20 18,207
F. T. Wooding & Sons, Ltd., S.E.24 18,206
Heath Estates (Bldrs.), Ltd., S.E.1 17,905
L. Fowler & Co. (Bldrs.), Ltd., S.E.6 ... 17,880
Wm. Blood, Ltd., S.E.11 17,875
Chas. H. Graff, Ltd., Horley, Surrey ... 17,791
C. H. Gibson, Ltd., Croydon 17,615
J. W. Ashdown, Ltd., S.E.14 17,187
R. J. Holland, Ltd., S.E.15 17,003
Frank Bartlett, Ltd., W.12 16,953
Redvales, Ltd., S.W.1 16,789
Lander and Houghton, Ltd., N.W.1 16,674
C. W. Froy & Sons, Ltd., S.E.22 16,671
C. Graham Smith (Bldrs.), Ltd., S.E.17 ... 16,671
S. Varney & Co., Ltd., S.E.24 16,568
C.A.S. (Contractors), Ltd., S.W.10 16,550
‡James, Shackell & Co., Ltd., 182, Finchley-rd., N.W.3 16,508

Coatbridge.—Kirkwood site development, for the Corporation. James Monteith, architect and surveyor, Municipal-chbrs., Coatbridge. Excavation, brick, building and allied works: *Louden & Inglis, Ltd., Coatbridge, £56,124. Plumbing, sanitary engineering and allied works: *James Bryce & Sons, Ltd., Coatbridge, £14,642. Joinery, carpentry and allied works: *J. Bain & Co., Ltd., Coatbridge, £21,293. Plaster, lathing, cement and allied works: *William Watt & Sons, Coatbridge, £2,436. Roof tiling, roughcasting and allied works: *John Wallace & Sons, Ltd., Chryston, £5,061. Steel windows, casements and allied works: *The Crittall Manufacturing Co., Ltd., Glasgow, £3,031. Electrical fittings, installation and allied works: *Andrew Craig, Coatbridge, £2,237. Painting, decorating and allied works: *Thom Decorators, Ltd., Coatbridge, £2,436.

Congleton.—Conversion of Buglawton Hall as a residential school, for Manchester T.C.: *Cooper Bros. & John Clayton, Ltd., Macclesfield.

Crayford.—Eight shops, 6 maisonettes, 4 flats, store, messroom and 4 garages, for U.D.C. G. G. Anderson, M.I.Mun.E., E. & S., Town Hall.
S. G. and A. Agombar, S.E.27 ... ... £29,412
*Crayford U.D.C. Direct Labour Organisation, Town Hall, Crayford 27,872

Crayford.—15 dwellings at Bourne-rd. housing scheme No. 32, for U.D.C. G. G. Anderson, M.I.Mun.E., E. & S., Town Hall. Quantities by A. J. H. Sprague & Son.
H. J. Riche & Son, Ltd., Chislehurst ... £29,020
W. J. Eaglen, Ltd., S.E.9 28,330
W. E. Wright (Eltham), Ltd., S.E.9 27,410
J. E. Jones, Barnehurst 26,930
*Dartford Industrial Co-op. Society, Ltd., 93, Kent-rd., Dartford 25,633

Croydon.—Erection of a further 400 dwellings on the north section of the New Addington housing estate, for B.C.: ‡Wates, Ltd., £593,599.

Dagenham.—Construction of four houses in Dagenham-rd., for B.C.: ‡S. R. Bryett, £6,200.

Derby.—Adaptations at London-rd. Bus Depot (stage 4), for T.C.: *Kirkland (Derby), Ltd., St. Peter's-st., Derby, £19,852.

Derby.—600 "No Fines" houses at Mackworth estate, for T.C.: *Geo. Wimpey & Co., London, £744,036.

Ebbw Vale.—22 houses at Cwm Hir, Fitzroy estate, for U.D.C. J. L. Thomas, L.R.I.B.A., A.R.I.C.S., architect to council, Council Offices, The Walk:
W. Miles & Sons, Ebbw Vale £39,618
Messrs. F. Hann & Sons, Ebbw Vale ... 38,603
Harris & Co., Ltd., Hereford £36,296
*W. J. Howells, 25, Cambridge-gdns., Beaufort, Ebbw Vale, Mon. 33,992

Epsom and Ewell.—House at municipal bath site, East-st., Epsom, for B.C. Norman Auty, M.I.C.E., B.E. & S., Town Hall, The Parade: *H. Bailey, Leatherhead-rd., Chessington.

Fareham.—48 dwellings at Wicor housing site, Seaward extension, Portchester, for U.D.C. H. T. Privett, E. & S., Westbury Manor, West-st., Fareham, Hants. Quantities by Wm. L. Humby, F.F.S.(Eng.), 7, Stoke-rd., Gosport. 24 houses and 12 flats, *Nail and Holloway, Ltd., Cornaway-la., Portchester, Hants, £47,587. 12 flats, *C. Sturgess, 73, Leith-av., Portchester, Hants, £14,137.

Gateshead-on-Tyne.—Erection of 150 two-storey Dorran houses: *Robert G. Tarran & Son, Ltd., Perth, value £250,000.

Glasgow.—623 houses at The Garthanlock housing site, for Corporation. Est. cost, £1,130,406. Archibald G. Jury (F.), architect, Housing Offices, The Trongate, Glasgow: *Glasgow Corporation Direct Labour Department.

Glasgow.—Alterations and additions to the boiler house and swimming pool at Lorne-st. Public School. John MacNab (F.), architect, 129, Bath-st., Glasgow: *James MacGlashan & Son, Ltd., Glasgow, £8,924.

Lanark.—Erection of 92 Carmyle houses at Crawforddyke, Carluke, for C.C.: *A. A. Stuart & Sons, Ltd., Glasgow, £164,275.

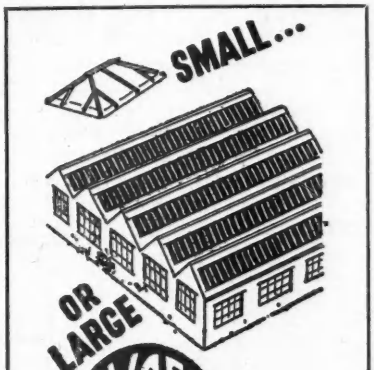
Leek.—Houses, Haregate estate, for U.D.C.: 10, *Frost & Co., Ltd.; 12, *Tideswell Bros., Ltd.

Leyburn.—Erection of 12 houses in Park-la. area, for R.D.C. Architect, N. Dent, Finkle-st.-chbrs., Richmond: *C. Chapleo & Sons, Grove Sawmills, Leyburn.

¶London (Admiralty).—Particulars of contracts placed by Civil Engineer-in-Chief's Dept., Admiralty. *Deal*: Construction of Barrack Block, R. Corben & Son, Ltd., West Borough, Maidstone. *Chatham*: Modernisation of latrines, J. H. Durrant & Son, Ltd., 282-284, High-st., Rochester. *Chelmsford*: Concrete access roads, Henry Potter (Wm. Sharp), Ltd., Fairfield Works, Chelmsford, Essex. *Ford*: Resurfacing hangar floors, C. J. Sims, Ltd., Abbey House, 2, Victoria-st., London, S.W.1. *Culdrose*: New building, Thomas Bros., 1, Torre-cl., Porthleven, Helston.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended December 6.
Dismantling and re-erection work: Cozens and Sutcliffe, Ltd., Enfield, Middx. *Building work*: Potter Bros. (Builders and Contractors), East Dereham, Norfolk; F. R. Hipperson & Son, Ltd., Dagenham, Essex; F. Parkinson, Ltd., Blackpool. *General maintenance work*: Lewis and Watters, Ltd., Leamington Spa, Warwicks. *Heating installation*: Norris Warming Co., Ltd., London, W.C.1.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended November 29:—
Building Work: Dudley Coles, Ltd., Hartley, Plymouth; R. Corben and Son, Ltd., Maidstone, Kent; Bosworth and Wakeford, Ltd., Daventry, Northants; F. C. White, Ltd., Boscombe, Hants; R. and H. Wale, Ltd., Sandy, Beds.; Thos. Gill and Son, Norwich; E. Bowman and Sons, Stamford, Lincs. *Civil Engineering and Building Work*: G. Percy Trentham, Ltd., Reading, Berks. *Heating services*: Norris Warming Co., Ltd., London, W.C.1. *General Maintenance Work*: Percy Beck, Ltd., Leicester; Kerridge (Cambridge), Ltd., Cambridge; H. Lawrence and Sons, South Croydon.



L.C.C.—Erection of a county secondary school at Woodham-rd., Lewisham, as a county complement to Prendergast school (Lewisham East).
Richard Costain, Ltd., Westminster ... £273,989
C. P. Roberts & Co., Ltd., Holborn ... 273,464
Lavender McMillan, Ltd., Worcester Park 272,159
Tersons, Ltd., Finsbury... 271,565
A. T. Rowley (London), Ltd., Ltd., Tottenham 271,263
E. H. Smith (Croydon), Ltd., Croydon ... 264,468
Rush & Tompkins, Ltd., Sidcup 260,978
Kirk & Kirk, Ltd., Putney 253,000
M. J. Gleeson (Contractors), Ltd., North Cheam 246,618
Galbraith Bros., Ltd., Holborn 243,967
*Thomas & Edge, Ltd., Woolwich 243,018
The architect's comparable estimate is £232,620.

London (Metropolitan Police).—14 flats and 6 maisonettes at 33, Brockley-park S.E.23: *A. Roberts & Co., Ltd., £46,221. 18 flats at 229-231, Willesden-la., Willesden: *W. J. Marston & Son, Ltd., £36,442. 4 flats at Nuxley-rd., Barnfield-rd., Belvedere: *Halse & Sons, Ltd., £8,669. Road repairs and pavings at Hendon Police College: *Constable Hart & Co., Ltd., £3,081. Decorations and repairs at Caledonian-rd. Police Station: *Thos. Cole (Barnsbury), Ltd., £2,872. Alterations and internal decorations at Albany-st. Police Station: *Chas. Baines, £2,475. External painting and repairs at North London Magistrates' Court: *W. T. Ricketts & Sons, Ltd., £850. Internal alterations and decorations at Rochester-row Police Station: *Chas. Baines, £599. Repairs and internal decorations at 47-50, Clarence-gdns., N.W.1: *Chas. Baines, £505.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended November 29:—
London: King Edward-bldg., E.C.1, internal painting, Alfred Bagnall and Sons, Ltd., 141 Uxbridge-rd., London, S.W.12; Whitehall, Parliament-sq. and Broad Sanctuary, erection of temporary stands, John Mowlem and Co., Ltd., 91 Ebury Bridge-rd., S.W.1; Kensington Palace, modernisation and conversion of apartment No. 1, Turriff Construction, Ltd., 48 Wellesley-rd., Croydon, Surrey; Royal Hospital, Chelsea, alterations to south-east wing eastern quarters, J. Jarvis and Sons, Ltd., 12 Buckingham Palace-gdns., S.W.1. *Buckinghamshire*: Block "E," Bletchley Park, alterations and additions, Betts and Faulkner, Ltd., 31, High-st., Stony Stratford, Bucks. *Essex*: E.R.D.E., Waltham Abbey, erection of telephone exchange stability test house etc., Hammond and Miles, Ltd., Scrafton-rd. Works Ilford-la., Ilford, Essex. *Gloucester*: N.S.H.C. Hostel, Bridgend, Stonehouse, internal decorations, W. J. Naylor and Co., (Painting Construction, Ltd.), Station-rd., Filton, Bristol. *Herefordshire*: Ministry of Supply, Sheds 1 and 2, Pontrilas, Hereford, refelting roofs and repairs, Jas. Robbins and Sons, West-under-Penyard, Nr. Ross-on-Wye. *Hertfordshire*: Hemel Hempstead, erection of Adayfield branch post office, Jesse Mead, Ltd., Chesham, Bucks. *Lancashire*: Ministry of Health, Moss Side Hospital, Maghull, construction of green house and boiler house, Foster Bros. (Rainford), Ltd., Lords Fold, Rainford, St. Helens. *Oxfordshire*: Oxford Station Sorting Office, extension, Kingerlef and Sons, Ltd., 35A, Queen-st., Oxford.

¶London (War Dept.).—Works contracts placed by W.D. during week ended November 29:—
Yorkshire: Miscellaneous, F. Shepherd and Son, Ltd., York. *Northumberland*: Building work, R. Hush, Blyth. *Nottinghamshire*: Miscellaneous, W. and J. Simons, Ltd., Nottingham. *Derbyshire*: Painting and decorating, D. C. S. Tunbridge, Spondon. *Denbighshire*: Painting, T. H. Kenyon and Sons, Ltd., London. *Shropshire*: Building work, Geo. Linnecor and Son, Ltd., Birmingham.
Warwickshire: Miscellaneous, W. and J. Webb, Ltd., Birmingham, 19. *Wiltshire*: Building work, Geo. Shears and Sons, Ltd., Bournemouth; painting and decorating, C. A. Hayes and Sons (Painting) Ltd., Bristol. *London*: Building work, W. W. Rowney and Co., Ltd., London, S.E.1. *Surrey*: Miscellaneous A. J. Wait and Co., Ltd., Wallington; Miscellaneous, J. C. Williams and Co. Ltd., Wallington.

Louth.—Erection of 40 dwellings, for B.C. Vallance & Westwick, architects, White Hart-chbrs., Mansfield: *Harold H. Adkins, 39, Wide Bargate, Boston, Lincs.

Luton.—Erection of 116 "Cornish Unit" houses on the Westmorland-ave. estate, for T.C.: *Selleck Nichols & Co., Ltd., £153,380.

Lytham-St.-Annes.—92 houses, Kilnhouse-la. site, for T.C.: *Atherton Bros. (Blackpool), Ltd.

Manchester.—Adaptation of "F" home at Newholme, for T.C.: J. & J. Parish, Ltd., Withington, Manchester.

Manchester.—Stage 2 of new Jews' School at The Polygon: G. & W. Smith, Ltd., Manchester.

Manchester.—158 houses at Hillside, Blackley, for T.C.: *Direct Labour. 38 houses at Bank House Ext. No. 2, Blackley: *W. J. Simms, Son & Cooke, Ltd., Nottingham.

Newcastle-under-Lyme.—Erection of maisonettes and shops at Bradwell estate, for B.C.: *Mr. H. Stubbs, £86,585.

Norwich.—Dwellings for City C., South Tuckswood estate: 24, ‡Caston's Builders, Ltd., £28,553; 101, ‡T. Gill & Son, £118,428; 24, ‡Burrell Bros., £24,883. South Park-ave. (second extension): 43, ‡Ford and Carter, £50,627.

Erection of 30 flats at Victoria-st., ‡Direct Labour, £40,494.

Nottingham.—Erection of police operational centre at Strelley-rd., Bilborough, for T.C.: *W. J. Simms, Son & Cooke, Ltd., Nottingham.

Oldham.—Stage 11, Limehurst prim. sch., for E.C.: *Hills (West Bromwich), Ltd.

Oxford.—52 houses at Cowley airfield, for City C. E. G. Chandler, A.R.I.B.A., A.M.T.P.I., City Architect and Planning Officer, Oxford. Quantities by H. J. Ridge, F.R.I.C.S., 23, Beaumont-st., Oxford: ‡Benfield & Loxley (Oxford), Ltd., £75,530. (Subject to M.O.H. & L.G. approval.)

Rothwell.—Erection of 12 houses on the Haigh-rd. site, for U.D.C.: *E. Appleyard, Ltd., £17,410.

Salford.—Construction of butted classrooms at Stott-la., Pendleton, for E.C.: *P. Hamer, Ltd., Swinton, £5,680.

Salford.—Adaptations at "Cranbrook," Sedgley Park-rd., Prestwich, for T.C.: *Arthur Bradshaw, Ltd., Prestwich.

Shipley.—124 dwellings at Wrose No. 2 estate, for U.D.C.: ‡Direct Labour, £155,328.

South Shields.—Erection of 68 houses at Simonside, for T.C. John Reid, B.E.: *Direct Labour, £89,000.

South Shields.—Erection of six disabled persons' bungalows, for T.C., to mark the Coronation. John Reid, B.E.: *Direct Labour.

Swansea.—New cubicles, a new refreshment building and improvement to the Morriston Baths: *Central Works Department, £9,826.

Upholland.—44 houses for 1953 programme: ‡J. Gaffney & Son, Ltd.

Wakefield.—New infants' school for 240 scholars at Kettlethorpe, for City C. City E., Room 33, Town Hall: *Walter G. Birch (Harrogate), Ltd., Montpellier-pl., Harrogate, Yorks. (Subject to approval of Ministry of Education and City Council.)

Wakefield.—100 houses at Kettlethorpe estate, for T.C.: *Harlow & Milner, Ltd., Warren-yard, Warrengate.

Wallasey.—36 houses at Buxton House estate *J. L. Rawsthorne, Ltd., Belvedere, Sawmills, £47,371. 4, *Lloyd & Cross, Ltd., Birkenhead, £5,504.

Ware.—30 houses, Redan-rd., for U.D.C. W. J. Davis, E. & S.: 12 houses, *Geo. Davies & Sons (Broxbourne), Ltd., "The Spinney," St. Margarets, Herts, £15,900. 18 houses, *Mustoe Bros., 65, St. Margarets-rd., Stanstead Abbotts, Herts, £23,706.

West Hartlepool.—Erection of 52 houses at Owton Manor, for T.C.: *Leslie & Co., Woodland-rd., Darlington.

Whitley Bay.—Erection of flats and maisonettes on the Seatonville estate, for U.D.C.: *Gilbert Park & Son, Tynemouth-rd., North Shields, £18,829.

Worcester.—Erection Dines Green primary school, for City C. Willis, Llewellyn Smith & Waters, 33, Foregate-st., Worcester. Quantities by Watkins & Decker, 13, Grays Inn-sq., London, W.C.1: *Dolton Bros., Ltd., Newtown-rd., Worcester, £23,898.

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